PROPOSALS REGARDING SUPERFUND AND RELATED TAX PROVISIONS

HEARING

BEFORE THE

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HOUSE OF REPRESENTATIVES

NINETY-NINTH CONGRESS

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PROPOSALS REGARDING SUPERFUND AND RELATED TAX PROVISIONS

THURSDAY, MAY 9, 1985

House of Representatives,
Committee on Ways and Means,
Washington, DC.

The committee met, pursuant to notice, at 10:05 a.m., in room 1100, Longworth House Office Building, Hon. Dan Rostenkowski (chairman of the committee) presiding.

Chairman Rostenkowski. The committee will come to order.

Today, the Committee on Ways and Means will receive testimony regarding reauthorization of the Hazardous Substance Response Trust Fund or Superfund.

In 1980, Congress created a major Federal program to clean up the worst abandoned waste sites in the country by enacting the Comprehensive Environmental Response, Compensation and Liability Act. The act provided a 5-year, $1.6 billion program, of which 87.5 percent was financed by excise taxes on petroleum-specified chemicals, and 12.5 percent was to be appropriated from general revenues.

The goal of the 1980 legislation was to provide startup funding for the cleanup of hazardous waste sites. The 1980 act terminates the feedstock taxes on September 30, 1985. The 1980 act also established the Post-Closure Liability Trust Fund, funded by an excise tax on the disposal of certain hazardous wastes.

As Congress reviews proposals to reauthorize Superfund, we must consider the need for major cleanup over the next 5 years and beyond. In the last Congress, the Ways and Means Committee reported and the House approved legislation providing $10.1 billion in revenues through 1990. The legislation did not become law. Consequently, the committee must begin to review both the revenue levels needed for funding the necessary cleanup of hazardous substances and the appropriate revenue sources for that funding.

I have scheduled this Superfund hearing early in the year before other House committees have had an opportunity to report specific spending legislation, because I anticipate that our committee's agenda will be crowded for the foreseeable future with consideration of major tax reform proposals.

The Committee on Ways and Means will wait to mark up reauthorization legislation until the other committees of jurisdiction have had an opportunity to consider what the spending needs of this cleanup program will be over the next several years.

I ask unanimous consent that the press release announcing this hearing be placed in the record at this time.

[The press release follows:]

[For immediate release, Monday, April 22, 1985]

HON. DAN ROSTENKOWSKI (D., ILL.), CHAIRMAN, COMMITTEE ON WAYS AND MEANS, U.S. HOUSE OF REPRESENTATIVES, ANNOUNCES A HEARING ON VARIOUS PROPOSALS REGARDING SUPERFUND TAX PROVISIONS

The Honorable Dan Rostenkowski (D., Ill.), Chairman, Committee on Ways and Means, U.S. House of Representatives, today announced hearings concerning various proposals to extend and modify the expiring tax provisions of the Hazardous Substance Response Trust Fund (Superfund) and proposals to expand the funding mechanism for Superfund to include additional sources of revenue. The hearing will be held on Thursday, May 9, 1985, beginning at 10:00 a.m., in the main Committee hearing room, 1100 Longworth House Office Building.

In announcing the hearings, Chairman Rostenkowski noted, "During the last Congress, there was considerable controversy concerning the Environmental Protection Agency's ability to utilize efficiently the significantly increased fund size which the House-passed bill would have provided. The amount of funding necessary and the appropriate sources for that revenue will have to be examined again in this Congress. We must proceed with cleanups as quickly as is prudent, but determining the exact level of cleanup which can be undertaken efficiently has proven to be difficult. In reviewing increases in fund size, the Congress must consider the appropriate sources for the additional revenues. Many persons have stated that the projected cost of cleaning up Superfund sites has increased to the point where cleanup can no longer be financed solely through feedstock taxes. This assertion must be evaluated and proposed alternative sources of revenue carefully analyzed. Finally, proposals to expand the permissible uses of the Superfund must be carefully reviewed in order to determine whether the Superfund is the appropriate source of funds for such uses. Additionally, the Committee must look at the effects on the rate of cleanups of diverting revenues to these other purposes."

BACKGROUND

Under current law, excise taxes are imposed on crude oil and certain chemical feedstocks. Revenues equivalent to these taxes are deposited into the Superfund. These amounts are available for expenditures incurred in connection with releases or threatened releases of hazardous substances into the environment. These taxes will terminate on October 1, 1985.

In addition, current law imposes an excise tax on hazardous waste which is received at a hazardous waste disposal facility and which will remain at the facility after its closure. These tax receipts are deposited into the Post-closure Liability Trust Fund. These taxes also will terminate on October 1, 1985.

During the 98th Congress, the House of Representatives passed the Superfund Expansion and Protection Act of 1984 (H.R. 5640). No action was taken on this bill by the Senate. During this Congress, numerous proposals have been made to extend and modify the Superfund and to expand its sources of revenues beyond the current excise taxes.

SCOPE OF HEARINGS

The Committee invites testimony on a wide range of issues concerning the funding of the Superfund. These issues include the substances subject to the feedstock excise taxes and the rate of those taxes; proposals to expand the sources of revenue for the Superfund; and permissible use of the Superfund.

Details for submission of requests to be heard

Individuals and organizations interested in presenting oral testimony before the Committee must submit their requests to be heard by telephone to Harriett Lawler [(202) 225-3627] no later than close of business, Thursday, May 2, 1985, to be followed by a formal written request to Joseph K. Dowley, Chief Counsel, Committee on Ways and Means, U.S. House of Representatives, 1102 Longworth House Office Building, Washington, D.C. 20515. Notification to those scheduled to appear will be made by telephone as soon as possible after the filing deadline.

It is urged that persons and organizations having a common position make every effort to designate one spokesman to represent them in order for the Committee to hear as many points of view as possible. Time for oral presentations will be strictly limited with the understanding that a more detailed statement may be included in the printed record of the hearing. This process will afford more time for members to question witnesses. In addition, witnesses may be grouped as panelists with strict time limitations for each panelist.

In order to assure the most productive use of the limited amount of time available to question hearing witnesses, all witnesses scheduled to appear before the Committee are required to submit 100 copies of their prepared statements to the Committee office, room 1102 Longworth House Office Building, at least 24 hours in advance of their scheduled appearances. Failure to comply with this requirement may result in the witness being denied the opportunity to testify in person.

Requests to be heard, prepared statements to be presented in person, and statements filed for the printed record of the hearing, must contain the following information:

1. The name, full address, and capacity in which the witness will appear, as well as a telephone number where the witness or a designated representative may be reached;
2. A list of any clients or persons, or any organization for whom the witness appears; and
3. A topical outline or summary of comments and recommendations.

Written statements in lieu of personal appearance

Persons submitting written statements for the printed record of the hearing should submit at least six (6) copies by the close of business, Friday, May 24, 1985, to Joseph K. Dowley, Chief Counsel, Committee on Ways and Means, U.S. House of Representatives, 1102 Longworth House Office Building, Washington, D.C. 20515. (See other requirements enumerated above.) If those filing written statements for the record of the printed hearing wish to have their statements distributed to the press and the interested public, they may provide 100 additional copies for this purpose to the Committee office before the hearing begins.

Chairman ROSTENKOWSKI. There are many witnesses who have been scheduled to testify today. Consequently, let me urge each of you to adhere to the time restraints so that everyone will have an opportunity to be heard.

I will yield at this time to Mr. Duncan of Tennessee.

Mr. DUNCAN. Thank you, Mr. Chairman.

I admire the chairman's foresight in scheduling this hearing during a period when the members have the time to give it the thoughtful deliberation that it certainly needs.

The importance of reauthorizing the Superfund Program in a timely manner and on a soundly financed basis really cannot be understated. The cleanup of toxic waste in our country is one of the most serious environmental issues that this Congress will address.

This hearing should permit the Committee on Ways and Means to devise a fair funding structure and one that will assist the Environmental Protection Agency in achieving its primary task of prompt and efficient cleanup of the toxic waste sites that threaten public health and environment.

This is a complex and emotional issue. It is a serious issue in both human and economic terms. Congress' reauthorization should assure that the amount of funding and the uses of these funds will go to a toxic waste cleanup program that is administratively feasible and economically efficient.

I look forward to the testimony of our witnesses today, and I am sure it will be most helpful to all of us on the committee.

Thank you, Mr. Chairman.

Chairman ROSTENKOWSKI. Thank you, Mr. Duncan.

Mr. Downey, do you have a statement?

Mr. **Downey**. Thank you, Mr. Chairman.

I want to congratulate you also for having these prompt hearings. This is an important matter for the entire country, for people in New York State, and especially for the people on Long Island.

I would hope, Mr. Chairman, that in the deliberations, we understand two important facts. One, this problem is not going to go away, and two, things have gotten worse over the last few years.

Last year, this committee wisely supplied $10.2 billion over a several-year period to deal with this problem. I did not consider that an adequate amount of money; I considered that a compromise.

I would hope that as we begin deliberations, we keep that figure of $10.2 billion in mind, and not shy away from the awesome responsibilities that this Congress has in attempting to deal with a problem that is getting worse over time and can only be solved if we have the will and the resources to solve the problem.

Chairman **Rostenkowski**. Are there any further observations?

[No response.]

Chairman **Rostenkowski**. If not, our first witness is our colleague, Henson Moore, who has contributed greatly to the deliberations in this area and who has performed a great deal of service to the committee.

Mr. Moore, if you are ready, you may begin.

STATEMENT OF HON. W. HENSON MOORE, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF LOUISIANA

Mr. **Moore**. Thank you, Mr. Chairman.

I would like to ask that my complete statement and a detailed description of the bill be admitted in the record.

Chairman **Rostenkowski**. Without objection, your entire statement and the description will be included.

Mr. **Moore**. I will just summarize.

Mr. Chairman, first I want to thank you. This is vitally important, as the gentleman from New York said, the gentleman from Tennessee, and yourself, to both the environment and the economy.

The State I come from suffers from both. The chemical industry is the biggest manufacturing employer in my State. Our State now is second in unemployment in the country. We also have the toxic waste dumps or sites that have to be cleaned up. We in Louisiana see both sides of the problem. We create the chemicals; we are left with the waste, as well.

We believe there must be a balance. We believe the sites must be cleaned up. We also believe that the taxing mechanism is crucial, and something I hope this committee spends a great deal of time on studying just how we raise that money.

If we are not careful—if all we do, for instance, is increase the feedstock tax from where it is now up to the $10 billion figure the gentleman from New York suggested, or even greatly in excess of what we have now under that figure, the petrochemical industry in the United States may well cease to exist. Certainly, many chemicals made cannot pay that kind of tax. We have got to find another way to spread the tax burden. We cannot just simply increase the feedstock tax fivefold or sixfold.

Right now, chemicals in the United States are running into the same kind of foreign competition that steel and many other American industries have been experiencing for some time.

As the major new petrochemical plants come onstream in Saudi Arabia, it is just a matter of time before we begin to have greater and greater difficulties in this area. Realizing that, I went to work a year ago with the Joint Taxation Committee on trying to fashion two additional sources of revenue to be considered by this committee. After a year's work, the Joint Committee has come up with the actual language. We put that in bill form, H.R. 1775, before this committee. It keeps the feedstock tax where it is now in terms of gross amount of money; it does not increase it.

It does reshift the feedstock tax, based on the section 301 studies from EPA, as to who ought to be paying a more rational share of the taxes. For instances, it decreases the amount being paid by organic chemicals from 65 percent, lowers it down to 38 percent, and increases the inorganic chemicals from 20 percent of the feedstock tax up to 59 percent. That is done in keeping with the section 301 studies, to try to make the tax fall upon those toxic substances actually found in those studies at the toxic waste sites. The early tax did not do that. In many cases, there was really no rhyme or reason why certain chemicals were taxed at the rate that they were. The feedstock tax raises about one-third of the money needed under the bill that I have introduced.

The second is a new tax called a waste-end tax. We considered that last year, Mr. Chairman, and could not get one passed through this committee, because the Joint Taxation Committee, after Herculean efforts, advised us that they did not know how to draft it to make it administrable. We have now come up with a waste-end tax that is administrable. It is one that is solid, it is one that is sound, it is one that will raise a definite amount of revenue. It is one that spreads the tax burden away from the basic chemical manufacturer and away from basic chemicals that may never be a toxic waste, and spreads part of the tax burden to some—I do not know how many companies—somebody said as many as 10,000—who take that basic chemical, turn it into a toxic waste, and are paying no tax now. It puts a tax upon them. About one-third of the revenue of the scheme that I foresee in this bill is raised by that waste-end tax.

In addition to that, we have an import fee on finished products that are coming into this country and escaping a feedstock tax. It does not raise that much money—about $130 million, I think, over the life of the bill. What it does do is prevent domestic chemicals from being disadvantaged competitively by virtue of our feedstock tax. Again, we had to work very carefully with staff of the Trade Subcommittee and with the Special Trade Representative to draw an import fee that was not a violation of GATT. We believe strongly that this one is not. This simply says if the American industries are paying a feedstock tax, a finished product comes into this country without having paid a feedstock tax, the amount of a feedstock tax that would have been paid had this been made in our country is assessed to that foreign product coming in, so they then both go into the marketplace on even competitive footing as far as these environmental taxes are concerned.

And finally, the final part of the bill is to raise the other one-third of the revenue needed in general revenues—an increase from 12.5 percent to 30 percent of this fund from general revenues—realizing that we as a people also have something to gain in all of this, and that many of the chemical companies never created the waste sites that are there now. Many have gone out of business, many of them have always environmentally taken care of their waste, and many never dumped it or stored it, yet they are paying a tax now.

So that is the scheme we envision under H.R. 1775. Mr. Chairman, the two most important things, I think, are the language we have been able to now come to grips with and draw up to the satisfaction of the Joint Taxation Committee, as I understand it, for a waste-end tax. That tax is sound. It says to people, if you are treating or incinerating, you are not taxed; if you are dumping and storing, you are taxed. It is trying to discourage the storage so we do not have future toxic waste sites and encourage people to treat or to incinerate.

That is the first and most important feature of the bill. The second part is to come up with a workable import fee that is not, in fact, a derogation of our general trade agreements.

Those are the two important features I think we have worked out in this bill that are worthy of this committee's attention and hopefully, will be incorporated in whatever bill comes out of this committee.

I thank you, Mr. Chairman.

[The prepared statement follows:]

STATEMENT OF HON. W. HENSON MOORE, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF LOUISIANA

The reauthorization of the Superfund program is the single most important environmental issue of this Congress and for my State. Louisiana is one of the few states that pays a significant portion of the tax and also has a significant toxic waste problem, We see both sides of the problem.

I have been working for more than a year to develop a Superfund tax structure that is fair and encourages sound environmental disposal and treatment of toxic waste. I believe very strongly that my bill, H.R. 1775, would provide a fair framework for reauthorizing the tax title of the Superfund program.

Business and economic expansion and protection of our environment are not mutually exclusive goals. Instead, a balance must be struck. Those responsible for the waste must pay for its clean-up, but those who benefit from the economic expansion and clean-up should also share in the cost.

Louisiana's economy is dependent on the industries most affected by the current Superfund tax. The petrochemical industry is accountable for one out of every eight jobs in Louisiana. U.S. petrochemical products are already declining in world competitiveness as foreign petrochemical feedstocks are subsidized by foreign governments. The tax structure in the reauthorization must not add to the burden our U.S. industries are already being forced to bear. Instead, we must look for fair alternatives and assure adequate clean-up resources.

The revenues provided in my bill, when coupled with EPA private-party clean-ups of approximately $2 billion, will yield some $7.3 billion in total resources for clean-up activity during the next 5-year phase of the Superfund program. This represents almost a four-fold increase in resources available for clean-up activities.

We should commit whatever resources will assist EPA in efficiently completing its most important task. My bill provides for the maximum expansion of the clean-up program that those who are directly responsible for administering the program will testify can be utilized efficiently. To the extent that anyone can devise a way to accelerate the clean-up further, without wasting resources, I certainly will encourage providing the necessary additional resources. However, we must assure ourselves that we are solving the Nation's hazardous waste problem and not compounding it with government waste.

The original 1980 legislation creating the Superfund program was written in anticipation of further Congressional action. It provided a mechanism, nine studies, for an informed Congressional response this year. It is unfortunate that this Committee did not have the benefit of those studies last year.

The current funding mechanism of the Superfund program, which relies exclusively on the feedstock tax, is fatally flawed in a number of respects.

The correlation between the cost of clean-up with respect to various chemicals appearing at Superfund sites and the tax imposed on them is virtually non-existent. The tax is imposed without regard to either the current or past environmental practices of taxpayers. As a result, a taxpayer with state-of-the-art environmental practices bears the same tax burden as one with less sound environmental practices and a taxpayer who may not have even been in existence is burdened with the same amount of tax liability as the taxpayer who was and may well have been responsible for existing Superfund problems. Many feedstocks are not even toxic. Moreover, EPA studies indicate that there is no basis for determining the extent to which taxpayers are able to pass through the tax to users of chemicals who are the more likely entities responsible for the existing Superfund problems.

For all of these reasons, a new overall tax structure for funding of Superfund, which places a minimum of reliance on the feedstock tax, is needed.

The fact that the current feedstock tax is not related to either the responsibility for existing sites or future anticipated problems is especially troubling to my State of Louisiana, which has a high concentration of feedstock production. More than 25 percent of the total Superfund tax is collected from feedstock production in Louisiana. Because companies producing in Louisiana are already taking responsibility for their past sites, there are only 5 national priority list sites being cleaned up in Louisiana by the Superfund. These companies are paying twice. First for the clean-up of that for which they are responsible, and second for the clean-up of the rest of the Nation where responsible parties cannot be found. Just as important, Louisiana companies are developing sophisticated new methods of treatment in an effort to prevent future toxic waste sites.

The taxing structure of my bill is designed to address these problems. It provides a stable and predictable source of revenue; it broadens the tax base from its current relatively narrow base; it minimizes the adverse economic impact on tax industries; and it focuses the tax on the type of industries and practices that are responsible for the environmental problems which the Superfund program is intended to address. The tax structure is balanced equitably between the feedstock tax, waste-end tax and general revenues, with each component financing approximately one-third of the total fund. The additional $5.3 billion of resources that would be provided directly to the Superfund program in H.R. 1775 include:

1. A much needed import tax on derivative products

Although the current feedstock tax applies to imported feedstocks, the tax is being avoided by foreign producers who, rather than importing the feedstock, import a derivative product. Such tax avoidance gives imports an unfair competitive advantage. My bill would correct that problem.

2. A waste-end tax to discourage the most environmentally risky waste-management practices and encourage the generation of less toxic wastes

More than 80 percent of the people recently surveyed in Louisiana believe that those who generate the waste should help pay for the clean-up. This tax will achieve that goal and will encourage the development of new and better methods of treatment.

3. A feedstock tax on crude oil and chemicals in the same proportion as EPA's recently released 301 studies

The $1.47 billion feedstock tax in my bill produces about the same amount of revenues as the feedstock-tax portion of the Administration's bill and raises annually about the same amount as under current law. It would tax the same list of basic chemical building blocks, and under the same rules, recommended by the Committee on Ways and Means in H.R. 5640 last year. Thus, it would be imposed on crude oil, petroleum products and a list of 56 petrochemical and inorganic feedstocks. However, my bill modifies the feedstock rate schedule to achieve a more equitable distribution, by reallocating the existing tax burden among the taxed industries and shifting the additional burden to a waste-end tax, as the EPA study says should be done. The portion of the feedstock tax attributable to crude oil would decrease from 15 percent under current law to 3 percent under my bill. Similarly, the portion attributable to organic feedstocks would decrease from 65 percent to 38 percent and the share of inorganic feedstocks would increase from 20 percent to 59 percent.

4. General revenue contributions of one-third of the total size of the fund

As this Congress choses, and rightfully so, to place a greater priority on hazardous waste clean-up, our federal commitment must also increase.

5. Recoveries of amounts from responsible parties

Those who are responsible for the site and can be identified should pay for its clean-up. My bill extends this important provision of current law.

Finally, it is expected that an additional $2 billion will be generated in private party expenditures outside of the Superfund. Those expenditures would raise the total level of the resources for our Nation's clean-up effort to $7.3 billion.

Our environment is our most precious natural resource. We must make every effort to clean-up abandoned toxic dumps, but we must also encourage environmental practices that will prevent future problems. We would be well advised to learn from the words of one of our Nation's earliest conservationists, Theodore Roosevelt, who said:

> The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation increased and not impaired in value.

We can behave well—certainly much better than those who preceded who are responsible for the existing problem. It would be unthinkable for us to fail to commit the resources necessary to assure that the next generation is protected from the dangers posed by hazardous waste sites. We should, and I believe my bill does, fund clean-up of past problems on a fair and efficient basis and encourage prevention of future problems.

Mr. Chairman, I would like to submit for the record a detailed description of the various components of my bill. And would be happy to answer any questions members of this committee may have.

DETAILED DESCRIPTION OF H.R. 1775

The original legislation creating the Superfund program, the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), was written in anticipation of further Congressional action this year. It provided a mechanism for an informed Congressional response to whatever further program changes are needed. CERCLA required nine studies to be completed in time for Congressional action this year. One of the studies addresses the trade ramifications of the current feedstock tax while another analyzes the relationship between the present feedstock tax system and toxic wastes found in sites studied by EPA. This study also analyzes the desirability and feasibility of alternative tax systems for funding Superfund. The findings of these studies clearly support the 5-year mix of resources contemplated by my bill, which are as follows:

	1986-90 (Revenue in billions)
Feedstock tax	$1.47
Import tax	.09
Waste-end tax	1.47
Recoveries	.80
General revenues	1.47
Private party expenditures	2.00
Total	7.30

Each of these components is described below.

Feedstock tax

The $1.47 billion feedstock tax in my bill provides about the same amount of revenues as the feedstock tax portion of the Administration's recently released proposal and raises annually about the same amount as under current law. However, rather than merely extending the current feedstock tax rules, this bill makes some significant improvements.

It would tax the same list of basic chemical building blocks recommended by the Committee on Ways and Means (the "Committee") in H.R. 5640 during the 98th Congress. Thus, it would be imposed on crude oil, petroleum products and a list of 56 petrochemical and inorganic feedstocks.

While I hope that the Committee will make improvements in the list, I believe that the list contained in this bill is an appropriate starting point for the legislative process. I am confident that input from other Members will improve the list. I also intend to seek improvements, including an amendment regarding nickel, which I do not believe should be taxed. The appropriate time to improve the list is after the Committee has taken testimony from EPA and the public regarding evidence connecting particular feedstocks to toxic sites.

My bill includes virtually all the other amendments to the feedstock tax structure recommended by the Committee last year in H.R. 5640. Thus, it would maintain the current CERCLA exemptions for methane and butane used as a fuel, for substances used in the production of fertilizers, for sulfuric acid produced as a by-product of air pollution control, and for taxable chemicals made from previously taxed chemicals.

We now understand the current feedstock for what it is—the most arbitrary tax in the Internal Revenue Code. The tax burden it imposes on taxpayers has little correlation to Superfund expenditures either on a retroactive basis, i.e., spending required to clean up for past environmental practices, or on a prospective basis, i.e., expected spending required to clean up for future environmental practices. The CERCLA study discussion of the retroactive equity of the current feedstock tax makes this very clear:

[T]here is an inevitable mismatch between current taxpayers [of the feedstock] tax and previously disposed wastes. Because of this mismatch, we do not know whether the distribution of the tax burden among these industries and the firms within them reflects the degree to which each has contributed to the problems addressed by CERCLA.

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In short, the current tax both includes and excludes feedstocks that HRS data indicate could be appropriately taxed. Consequently, some feedstocks (and the firms involved in their production and use) bear a tax burden that available evidence indicates may be unwarranted. Further, still other feedstocks bear no tax, despite their presence at Superfund sites. Both situations result in an inequity. CERCLA 301(a)(1)(G) Study at 5-4.

The Study's conclusion with respect to retroactive equity of the feedstock tax is as follows:

This suggests that while the current CERCLA tax falls on the broad industrial groups responsible for fund spending, its distribution among individual substances is not particularly equitable from a retrospective viewpoint. CERCLA 301(a)(1)(G) Study at 5-5.

Likewise, the Study's discussion of prospective equity also highlights the arbitrary nature of the feedstock tax:

Prospective Equity.—Prospective equity requires that the burden of a CERCLA tax fall on the parties and substances that are likely to cause Fund spending for hazardous substances that have not yet been released into the environment. Further, similarly situated firms ought to pay the same tax, while firms that are different with respect to the likelihood of causing Fund spending ought to be treated differently. Because the current feedstock tax base is broadly defined and has few exemptions, the tax is levied during the production process of all of the substances that are likely to give rise to Superfund spending. It does not matter if Fund spending occurs because feedstock itself has been spilled into the environment, one of the feedstock's hazardous products is released, or the wastes at the end of the production process have been released into the environment (legally or otherwise). The point is simply that by taxing all feedstocks very early in the production process, EPA can be confident that firms producing any substance responsible for CERCLA spending have paid into the Fund. In the absence of detailed econometric modeling, however, we cannot estimate the amount of the tax burden passed through the chain of production to these substances.

On the other hand, by extending the reach of the feedstock tax so widely, it is possible that the tax burden will not fall equally on similarly situated firms and that some substances and parties may bear a tax burden that is not commensurate with their contribution to Fund spending.

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In short, the current feedstock tax offers broad coverage of all the substances and situations likely to evoke fund spending. The result of doing so is that this tax does not produce a high correlation between a firm's tax burden and the chance that its behavior will lead to Fund spending. This is because the tax does not discriminate among firms according to their use of the taxed feedstocks, including the hazardousness of the materials made from the feedstocks and the management of the wastes produced in the production process. CERCLA 301(a)(1)(G) study at 5-5.

The overall conclusions of the CERCLA Study indicate that no greater reliance should be placed on the feedstock tax than exists under current law. One finding of the Study that is useful is the analysis of existing toxic sites and the frequency with which chemicals have been found at those sites. That aspect of the Study indicates that the 3 major categories of feedstocks appear with the following frequency at toxic sites: 3 percent crude oil, 38 percent organic chemicals and 59 percent inorganic chemicals. My bill modifies the feedstock rate schedule to achieve a similar distribution of the tax burden while not increasing the total revenue from that collected under current law.

Import tax

Although the current feedstock tax applies to imported feedstocks, the tax can be avoided by foreign producers who, rather than importing the feedstock, import a derivative product. Such tax avoidance gives certain imports an unfair competitive advantage.

The import tax in my bill would eliminate this potential tax avoidance by applying a tax to imports that are directly and substantially produced from taxable feedstocks. The tax, imposed on the importer, would be the lesser of either 5 percent of the value of the imported substance or the amount of feedstock tax that would apply if the feedstock components were subject to the feedstock tax.

The CERCLA study examining whether the tax affects U.S. trade in intermediate and final chemical products derived from taxed feedstocks concluded that "the long-term outlook for trade in most intermediates does not look bright on account of competition from plants in low cost feedstock countries." Although the feedstock tax was not found to be a major factor in this trend—the strong dollar is the most significant factor—we should address the tax aspect of this problem.

Without this import tax, the feedstock tax would give imports a competitive advantage over domestically produced products. The import tax is designed to collect the same tax from imports that apply to domestically produced goods. It is not protectionist. It merely makes the tax system neutral as between domestic suppliers and foreign suppliers. The import tax is expected to raise $90 million over 5 years.

Waste-end tax

There was much interest last year in the Committee on Ways and Means to develop a waste-end tax as part of the funding mechanism for the Superfund program. As a result of time constraints, neither the Committee nor the Administration was able to develop a reliable waste-end tax. Fortunately, there has been time and the Administration now supports this method of funding.

The bill's waste-end tax is designed with three objectives—(1) to discourage the most environmentally risky waste-management practices, (2) to encourage the generation of less toxic wastes and (3) to provide an administrable, fair, and reliable source of revenues for the Superfund program.

My waste-end tax is intended to raise approximately $1.47 billion over the 5-year period, about one-half that which would be raised under the Administration's bill. My bill also contains some significant structural improvements over the Administration's waste-end tax. The most notable improvements are that the tax cannot be avoided by illegal dumping and the tax would not apply to certain waste treatment processes that should be encouraged as an alternative to disposing of wastes in the land, including approved waste water treatment.

The tax would apply only to hazardous waste. It would be imposed on wastes delivered to a treatment, storage, or disposal unit, as well as on waste disposed of in the ocean, exported from the United States or illegally dumped. The tax liability generally would be imposed on the owner or operator of a qualified waste-management facility, or the owner or operator of a vessel that disposes of wastes into or over the ocean. In cases where waste is illegally dumped or not sent to a qualified facility, the tax would be imposed on the generator.

Like the Administration's bill, this bill exempts wastes resulting from cleaning up CERCLA sites, and wastes presently required to be studied (covering high volume, low toxicity wastes, such as, mine tailing and drilling mud), and wastes stored in tanks for less than 90 days. Unlike the Administration bill, only the hazardous-waste residue of certain types of treatment would be taxed—namely, (1) EPA permitted treatment that renders waste nonhazardous (defined to include only processes meeting the destruction efficiencies required of incineration) and (2) treatment of waste water pursuant to the Clean Water Act. I believe that the absence of such exceptions would provide the wrong incentives and actually would discourage the use of environmentally sound alternatives to land disposal.

I have set my tax rates under the waste-end tax at the same level as in the Administration bill. As a result, the rate for waste management practices that have the most risk for the environment; that is, for landfills, surface impoundments, waste piles and land treatment units and waste illegally dumped would be as follows:

Year:	Rate
1986	$9.80
1987	10.09
1988	11.13
1989	13.48
1990	16.32
1991	16.32

The waste exported from the U.S., disposed into or over the ocean, or received at a qualified waste management unit other than one of those specified above, the rates would be one-fourth of the higher rate. While I recognize that my waste-end tax has excluded a number of items that are taxed under the Administration's proposal, in particular waste water treatment and certain forms of treatment which render waste non-hazardous, I believe that using the Administration's rates as a starting point is appropriate. Since the Administration has introduced its bill there has been a great deal of dispute with respect to the accuracy of the Administration's revenue projections. Representatives from affected industries already have presented persuasive evidence to me to indicate that the revenue that would be raised under the Administration's waste-end proposal is perhaps four or five times that which the Administration has projected. As a result, the Administration has undertaken a thorough reexamination of its estimates. My intent is to enact a waste-end tax which raises $1.47 billion over five years. It is my intention that the rates which I have set forth in my bill initially will be adjusted so that the final provisions will generate this projected amount of revenue. I am confident that better information will be available to determine the rates necessary to achieve this revenue goal before final Committee action. In addition, if for any reason the Committee decides it is necessary to substantially increase the rates, I feel that a "dry-weight" method of computation would be appropriate.

The waste-end taxin my bill significantly broadens the Superfund tax base to include industries that otherwise would not contribute to Superfund. Because those who bear the tax burden generally would be those disposing of hazardous waste, the burden will be borne by those much more closely connected with the Superfund problem.

Recoveries

The $800 million in recoveries that my bill authorizes to be appropriated to Superfund is the amount that the Administration estimates will be collected over the 5-year authorization period, and is based on the past 5 years experience with the Superfund program. It includes interest on Superfund investments, fines, and cost recoveries from parties responsible for response actions financed from the fund.

General revenues

Of all the alternatives, general revenue is perhaps the most appropriate source of funding for the Superfund program, other than recoveries from responsible parties. Devising a tax system to apply only to those accountable for this nation's toxic waste sites is impossible because many are either not in existence or cannot be identified. Moreover, it is clear that the entire public has benefited to some extent from these practices in the form of lower prices on products than would have been the case if sounder, albeit more expensive, environmental practices had been observed. Likewise, the beneficiary of the Superfund cleanup is the general public. Deficit concerns prevent me from recommending that all costs other than recoveries from responsible parties of the Superfund program be funded from general revenues even though that approach might be the most defensible from a fairness perspective. I am recommending that $1.47 billion over the 5-year authorization period be funded from general revenues. This is the same amount which will be raised from both the feedstock tax and the waste-end tax. It represents less than the $2.3 billion of general revenues that was approved by the House last year in H.R. 5640. Given all the relevant considerations, I believe it represents a fair general revenue component.

Effective dates

The effective date of my bill would generally be October 1, 1986. However, the effective date of many of the special provisions approved by the Committee on Ways and Means last session in H.R. 5640, would be the same as provided in H.R. 5640.

The effective date of the import tax would be October 1, 1986, in order to permit the Department of Treasury sufficient time to prescribe regulatory guidance.

Chairman ROSTENKOWSKI. Thank you, Mr. Moore.

Mr. Downey will inquire.

Mr. DOWNEY. Mr. Chairman, to my colleague, Mr. Moore, let me congratulate him on a fine statement and also, I think, on a balanced approach. I am not satisfied with the amount, and that is something we will talk about. But I think, Mr. Chairman, Mr. Moore has done the committee a service with the work that he has done in highlighting two elements that I want to just talk about in a little more detail.

One is the import tax on derivative products. I agree with you, Henson; I think that we should tax that, and I think we should get revenue from it.

Was the $130 million that you mentioned in your testimony limited by GATT considerations or the ability to raise the revenue?

Mr. MOORE. It is limited, really, I guess, by a vote. The first thing I would say to my good friend from New York is the fact that we were trying to make the imported chemical or derivative product equal to the American as far as the feedstock was concerned. We were not trying to really just raise a good deal of money, because then you did run into GATT problems of taxing something imported heavier than what was made in the United States.

So it was a combination of how much was coming into the country that kept the figures somewhat down, but more importantly, it was the fairness of trying to raise only the same amount an American producer would have paid on that same product.

Mr. DOWNEY. With respect to the waste-end tax, are you satisfied that the problems that occurred last time in terms of the administrability of the waste-end tax have been solved?

Mr. MOORE. Yes. I was willing to go with it last year. The Joint Taxation Committee tends to be wiser than perhaps I am and urged us not to do it, and we did not. They now say this tax is sound.

One idea of the waste-end tax I do not particularly care for that is in this bill is that it is a wet-weight tax. Most of my constituents are arguing to me very strongly, the chemical companies and whatever, it ought to be a dry-weight tax.

But here, I went with the joint committee because it tells me that the dry weight is not as administrable as the wet weight. So in trying to make this a workable tax, something that can be administered, so that when each one of you is called upon to vote, the Joint Taxation Committee will tell you in its opinion that, yes, it can be administered.

Mr. DOWNEY. Let me ask you about the amount, because this to me is going to be the critical question, because I think we are going to have widespread agreement, potentially, on how we raise it.

The $11.7 billion, which is in Mr. Sikorski's bill, H.R. 2022, of which I am a cosponsor, estimates are that that would clean up about 1,800 sites. The GAO estimates that there are 4,000 sites; the Office of Technology Assessment, 10,000; the States, 7,000. To me, the amount of money is critical to the number of sites we clean up. There is obviously a direct relationship between the two.

Why do you limit the amount that you have here to $7.3 billion, when I think admittedly, we are not going to do what we need to do with that amount of money?

Mr. MOORE. I can understand your point of view.

The figure that we took for these taxes to raise was the figure that I think the Senate was dealing with and EPA suggested. That is the only reason. I am not wedded to that number.

To be quite honest, as I will say again, I have both sides of the problem, in my district and in my State. We need the money to clean up the sites, and then I have the taxpayers who are paying it. Twenty-five percent of the total Superfund tax is paid by Louisiana employers right now.

The tax language I have drawn will fit any amount this committee determines. The amount is up to the committee. I hope we will not raise any more money than we can spend, but that is going to be in the judgment of the committee.

Mr. DOWNEY. And let me just say I am equally sensitive to the fact that I and anyone who has paid attention to what the Saudis are doing in terms of refining capacity that we do not want to put our chemical industry in a position where they cannot compete with them.

On the other hand, I believe it is possible to weigh their needs and balance them against the needs that literally millions of people in our country faced with the imminent possibility of their ground water being polluted and their children's health being harmed. We need to get on with dealing with this problem quickly.

Mr. MOORE. I fully agree and would simply suggest to the committee that if the committee determines that it needs more than $5 billion raised by these new taxes, we look to some other source like some kind of generally based tax, rather than increasing the feedstock tax.

Mr. DOWNEY. Well, Mr. Chairman, again, I want to congratulate the gentleman from Louisiana, because I think he has given us the building blocks— if not the feedstocks—for the proper tax.

Thank you.

Mr. MOORE. Thank you.

Chairman ROSTENKOWSKI. Mr. Duncan will inquire.

Mr. DUNCAN. Mr. Chairman, I would just like to also commend our colleague, Henson Moore, for the great work that he has put on this subject. I know he has put a lot of hard work on it in giving us some industry proposals, and we are very grateful to you for that.

Mr. MOORE. Thank you.

Chairman ROSTENKOWSKI. Mr. Gregg will inquire.

Mr. GREGG. Thank you, Henson. I am very impressed with your proposal.

There are a couple of questions I have on the philosophy of it. First, I presume the reason you have gone to the import tax, which I happen to agree with, is that if we tax the feedstocks at even the levels you are requesting here, or at a higher level, and do not include a tax on imports, we would be perverting the marketplace. It would force domestic consumers to use foreign goods, because foreign goods would not be subject to the tax. Is that correct?

Mr. Moore. The existing law does have an import fee on imported feedstocks. Feedstocks coming into the country, as I understand it, pay the same tax as domestic feedstock. It is the derivative manufactured products that are coming in now that do not pay it, such as batteries. Imported lead batteries do not pay a feedstock tax, yet imported lead does.

Mr. Gregg. Let's take an example. An automobile is probably the biggest ticket item that we import, I presume. There is a significant amount of materials, if domestically produced, the cost of which would be higher because the feedstocks that produce the plastics in the automobiles or produce the synthetics in the automobiles have to pay the domestic feedstock tax, which would not be reflected in an imported automobile, unless the imported automobile would be sold at a lower price.

Is that not a significant problem that we are going to have?

Mr. Moore. Yes, it is. The example you gave is absolutely correct. A substantial portion of an imported automobile, such as the rubber in the tires and the plastics in the automobile, comes from chemical industries. Imported finished products are not taxed under current law, whereas the American automobile would have paid a tax.

Mr. Gregg. Thus, as we are dramatically increasing Superfund funding, this is no longer a negligible problem. This is a fairly significant problem. And your proposal of an ad valorem tax on these items, which we cannot specifically define because they do not come in in a pure form of feedstock or some fairly close chemical formation to a feedstock, is really going to be a necessary approach to this whole tax structure, don't you think?

Mr. Moore. I think that is right.

Mr. Gregg. A second question. Do you think there should be some relationship between the toxicity of the chemical or its environmental persistence—in other words, the time it takes to break down upon disposal—and the tax?

Mr. Moore. Absolutely. As a matter of fact, the existing law we have that expires this year makes absolutely no judgment whatsoever. There are things being taxed under the existing feedstock tax that, to the best of my knowledge, have never shown up as being toxic. We tried to improve upon that with the only technical knowledge that has been made public by a governmental agency, and thus the section 301 studies made by EPA. So we have reshuffled who pays the feedstock tax in H.R. 1775, based on that study. But that is still not perfect. I am sure that there are still things in there being taxed that really should not be taxed at all—and some that should be taxed heavier.

Mr. Gregg. That is really a fundamental problem with this whole tax structure, as I see it—there is really no relationship to what causes the problem and what we are taxing. And that is especially the problem, as I see it, with the wet-weight approach, because basically, you can put a 5-percent solution or 20-percent solution into your waste, and you can cut down on the amount of wet waste you are disposing of, and you can have a much higher toxic waste at a much lower level of disposal and taxability, simply by adjusting the amount of pollutant which you are dumping into your wet waste.

So that I see as a fundamental flaw in the wet waste approach.

Mr. MOORE. I would agree with you on both points. H.R. 1775 improves this problem over the existing law, but does not solve it. No. 2, on the wet-weight situation, we do give a preferential tax rate to those situations that have a high concentration of water and a low concentration of waste, trying to get at the problem you are getting at—but it still does not make the problem perfect.

Mr. GREGG. I think you are on the right track. I would hope, though, that we could come up with something that would even be more precise in picking out those highly toxic wastes and not penalizing those less toxic wastes and also, as your bill does, encourage treatment and give benefit for treatment.

Mr. MOORE. I hope that is correct, too. Our problem is going to be finding data of a technical nature that we all agree upon, and about the only data we have now is EPA's. If there are others, I am certainly willing to work in that regard.

Mr. GREGG. Thank you.

Chairman ROSTENKOWSKI. Mr. Crane will inquire.

Mr. CRANE. Thank you, Mr. Chairman.

First, I want to congratulate our colleague for a lot of time and energy that he has put into this problem and I know the unique problems his State has gone through.

But could you answer a few questions for me. One, what is the existing law with respect to disposal of toxic wastes? I mean, if you are engaged in manufacturing, and you produce waste, how do you dispose of your waste?

Mr. MOORE. I think RCRA is the acronym for it—we passed several years ago a greatly strengthened version of how you store toxic waste, and that is not covered in the Superfund legislation per se. It is covered in other environmental legislation in place.

Mr. CRANE. Right. So in other words, we are dealing with a problem on an ongoing basis now, and the person who creates the waste has to absorb the cost of disposal of his own waste; right?

Mr. MOORE. That is correct.

Mr. CRANE. The Superfund was originally set up, as I understand it—and correct me if I am wrong—to deal with toxic waste sites where we could not find the person who was responsible for causing the waste; is that right?

Mr. MOORE. That is correct; basically, that is right.

Mr. CRANE. Well, then, it seems to me that all of it ought to be funded out of general revenues. Why put a burden—you know, visit the sins of the fathers on the sons. You know, that is like the argument that I stood on the foot of a black man for 400 years. I never stood on anybody's foot, and I do not think it is right to impose this production cost on any existing business that is dealing with its problem under existing law, for sins committed by people that we cannot identify. And since it is a production cost, and it has to be passed on to the consumer anyway, why handicap existing businesses that are already suffering in world competition when it is a national problem? We all want it resolved. It seems to me the whole thing should come out of general revenues.

Mr. MOORE. Certainly, I think a big chunk of it ought to come out of general revenues and I am proposing a third, which is an increase over the 12.5 percent that comes out of it under current law. There are many companies today that are not disposing at all of their waste; they are incinerating it or treating it.

In addition to that, if there is a site where you can identify an existing company that made that storage, they are called upon under existing law to clean it up without any Superfunds involved.

So there is a great deal of truth to what you are saying.

Mr. **Crane**. I appreciate the gentleman's comments.

Mr. **Archer**. Will the gentleman yield?

Mr. **Crane**. I am happy to yield.

Mr. **Archer**. I would like to associate myself with the comments of my friend from Illinois. I think it should be made clear over and over again to the public that the dumps that we are talking about cleaning up and the funds that are required to make that cleanup activity are because we have not been able to identify the responsible party for creating that problem for society. If we were able to identify that party, that party would be required under current law to pay the full cost of cleaning up that dump.

Now, what we are doing, even within your bill, which I think goes a long way in the right direction, is still to say that those people today who are producing hazardous waste but who are taking care of cleaning it up, which they must do under the law, are going to have to pay an additional tax for a transgression that occurred that they had nothing to do with.

And I share the view of Mr. Crane, and hope that we can move to broaden the base so that all of our society that benefits from this cleanup is involved in paying for the cost.

Mr. **Moore**. I would agree entirely and go back to my comments to the gentleman from New York, that any amount of money we are going to raise, the feedstock taxes should not be increased. That is the crippling tax that in fact will cripple domestic industries.

If we are going to raise money over and above what comes from the feedstock now, it ought to come out of general revenues, it ought to come out of a waste-end tax, or some additional broad-based tax of some sort. I fully agree.

Chairman **Rostenkowski**. Are there further questions?

If not, thank you, Mr. Moore.

Mr. **Moore**. Thank you, Mr. Chairman.

Chairman **Rostenkowski**. Our next witness is the Honorable James Florio, a Member of Congress from New Jersey, and also the chairman of the Subcommittee on Transportation and Tourism of the Committee on Energy and Commerce.

We are pleased to have you back—you might as well get a permanent chair here.

Welcome to the committee, Jim.

STATEMENT OF HON. JAMES J. FLORIO, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW JERSEY

Mr. **Florio**. Thank you, Mr. Chairman.

I appreciate the opportunity to come back and talk with you on this different subject other than Conrail.

I have a statement that I would like to put into the record, and I will try to summarize.

Chairman ROSTENKOWSKI. Without objection, your entire statement will be included in the record.

Mr. FLORIO. Thank you very much.

This is a very important piece of legislation and I think everyone acknowledges that fact. It will reauthorize the Superfund Program, which expires on October 1 this year.

The key question as to funding is who is going to pay for it, and how much is to be raised. I think we all are aware of the fact that the $1.6 billion fund over the initial 5-year period has not been as successful as many of us would have liked in terms of the cleanup record. You will recall that the tax system which was put into effect by this committee provided for about 88 percent of the funds to be raised through feedstocks, and about 12 percent to be raised through general Federal tax revenues.

I think few imagined the scope of the problem 5 years ago when we put this program into effect. I think it is a matter of record now that the management capability at EPA in the first few years was not all that it should be, and therefore we did not have an awful lot of cleanup.

I will skip through my testimony wherein I go and cite a number of studies and a number of GAO reports, OTA reports, and a lot of other reports, that say that the problem is far beyond what even EPA now estimates as being the extent of the problem. EPA is talking about a total universe of about 22,000 sites. One study says really, we should be talking about over 300,000 sites. EPA is anticipating 2,200 sites being on the National Priority List at some point. Others are saying there are as many as 4,000 to 7,000, the way the gentleman from New York has described the situation.

Suffice it to say that the problem is much bigger than we ever thought it was, and I would suggest to you that it is much bigger than EPA even thinks it is now.

In terms of the cleanup costs to address the problem, the administration is talking about $5 billion or so—$5.3 billion—over the next 5-year period. Governors are talking about $9 billion. Environmentalists are talking about bigger numbers than that.

Again, the key point is that this is a big problem that is going to cost a lot of money, and it is not something that is going to be dealt with in the next 5 years, and we should reconcile ourselves to that fact.

But we are as a result of practical experience talking about the next installment of the program over the next 5-year period.

Last year, I think we all recall, as a result of the hard work of this committee and the Congress, we passed what we thought was a good bill by a margin of 323 to 33—we do not see many bills passing by that margin—that provided for a $10.1 billion fund over the next few years.

I think the point that I would like to suggest to you that needs to be discussed is that there is a great deal of merit in the point that has been made by some that the bill has to be expanded off of what it is that anyone is now talking about.

Mr. Sikorski and others have introduced legislation that talks about a bill that is even bigger than last year's bill.

On the other hand, agencies like Office of Management and Budget and EPA will express to you their concern that EPA can spend such sums effectively. There is merit in their concern under the present configuration of the program. That is to say that unless the basic structure of the program is reformed, EPA may not be able to spend these moneys efficiently.

We have, and we will in the authorizing committee, make those reforms so that the program can be administered in an effective way.

I think it is important for everyone to keep in mind that the program expires on October 1, and therefore, we have to move forward expeditiously in order to get the program reformed, modified, and to include the appropriate amount of funding to clean up this problem that we have across the country.

Six sites being cleaned up in the last 4 years is totally inexcusable. I do not want to be sitting here 4 years from now, saying we have got another six sites cleaned up. So we have got to have programmatic reforms, and we think that we do that in our approach at the authorizing level.

Let us touch on two issues at the top of the committee's agenda as we prepare the Superfund legislation: The funding mechanism we will use to support the program—which is, of course, the province of this committee—and EPA's ability to spend an expanded Superfund. The final bill that passed the House last year with regard to funding had the feedstock approach and the authorized appropriations from general tax revenues. The proposal that you incorporated into the tax title incorporated a feedstock that talked about an average of 3 percent of sales price on all the feedstock substances that were taxed.

In response to a couple of points that were made, the rationale for feedstocks was, of course, that feedstocks are the building blocks of all of the chemicals and all of the wastes that we find at the sites that we are cleaning up.

Exports are not taxed—feedstocks. Imported feedstocks are taxed at all levels in the same way that domestic feedstocks are taxed.

I recognize that you are going to hear from others who will come after me, advocating other funding mechanisms in the way the gentleman from Louisiana has suggested other funding recommendations. And I think this committee should evaluate each and every one of them.

Representatives Wyden and Schneider have put forward a workable waste-end tax system. The administration, EPA, has a waste-end tax proposal that I thik is deserving of scrutiny and evaluation.

On the other side, Senators Bradley, Mitchell, and Chafee have developed some innovative, broad-based tax proposals. And again, I urge you to give some serious consideration to those proposals.

But I urge you also to keep in mind that the bottom line consideration has to be a secure funding base for this program, and the experience in the last number of years is that the feedstock is the most secure, most certain source of funding, and therefore, that has to be, I think, a significant component of any funding mechanism.

The chemical industry has argued that we should be concerned about imports, and we should not be concerned about imports. They have talked about the troubling U.S. trade balance, particularly in the chemical industry, and they are 100 percent correct; there are troubling trends.

Several weeks ago, my subcommittee held hearings on this crucial issue, and the testimony we received indicated that Superfund taxes are a relatively minor factor affecting the U.S. balance of trade with regard to chemicals.

Other factors, such as the value of the dollar, overseas sources of cheap energy, had a far greater impact on overall trade pictures.

Nevertheless, I think that there is some merit in the idea of having an import assessment, import tax, on feedstock derivatives. Last year, you will recall, we rejected that, because we did not think it could be administered in a way that was capable of being put into effect. I am now of the opinion, as the result of further information, that such a tax system can be administered in an equitable way. The ITC already has a system whereby feedstock derivatives are assessed with Customs duties. There can be an approach that can deal with our administrative concerns of last year that I think this committee should review.

One other point that I would like to raise about the funding mechanism. The administration's Superfund proposal contains a fundamental departure from the approach we have historically used in calculating revenues for Superfund. The administration's bill—and you may hear about it today—has calculated into the funding mechanism some $800 million of reauthorized funding to be supplied primarily by actions to recover penalties and costs from private parties who are found liable for creating specific site problems.

In other words, the funding level raised by taxes in the administration's proposal of $5.3 billion is really only $4.5 billion, and the balance of the money comes from this somewhat speculative source of revenues. It is our hope that as a result of anticipated litigation, they will be able to recover these moneys.

When we created Superfund in 1980, it was clear that our goal was strong liability provisions in the law to enable us to recoup and to recover moneys that were spent. But in no way did we calculate into our calculations of the $1.6 billion these certainly speculative amounts of money. That was a means of replenishing the fund.

Quite frankly, the experience in the last 4 years justifies our apprehensions about counting on the vigilance and the aggressiveness of EPA in recouping these moneys, in terms of providing certainty with what we have available.

Responsible parties have promised EPA over the last 4 years to pay $255 million in cleanup. That is 4 or 5 years' worth of recouping, and that is $255 million they promised. In fact, the total amount spent is $113 million, a small fraction of the Superfund tax dollars that were committed to cleanup and other activities by EPA.

As for the argument that EPA cannot spend increased funding fast enough, I will be the first to agree that the current program has to be fundamentally restructured, and I think we are in the process of doing that. The current level of activity would take something like 1,500 years under the administration's proposal, the funding proposal, to clean just the 2,200 proposed sites that go on the National Priorities List if we go forward in the way and at the rate that the Administration is going, with six sites per 4-year or 5-year cycle.

Unfortunately, when it comes to projecting funding needs for Superfund over the last 5 years, EPA, and Mr. Thomas particularly, who generally exhibits great faith in the management capacity of his agency, suddenly experiences a crisis in confidence. Earlier this year at the Senate, the agency said that they could provide for a $7.5 billion level, and that would be appropriate; they have since retrenched, I suspect, after consultations with OMB, to the point that $5 billion was the most it could spend in a cost-effective way.

Mr. Thomas and the EPA attempts to justify his gloomy forecast as to what he can use over the next 5 years by saying that there were two problems. First, EPA's ability to spend Superfund money cannot be beyond $5.3 billion, because they lack the necessary personnel and the management capacity to run a larger program.

Second, they say that there are insufficient resources out there in the private sector, in such crucial areas and industries as commercial laboratories, engineering, and design firms, who are available, and that that absence of capacity will inhibit the growth of the program.

In response to Mr. Thomas' first concern, I think the response is a relatively simple one. Superfund itself is to be used to support the Agency's administrative expenses, and therefore with an increased fund, it will be able to have the capacity, personnel, and the other management capacities, needed to expand the program.

I have conducted my own analysis of Mr. Thomas' management capacity on the basis of his track record of running the program over the last 2 years. The analysis shows that if EPA only manages to maintain the steady rate of growth that the program has experienced over that 2-year period, the agency should easily be able to expend in a cost-effective way at least $9.8 billion.

Mr. Thomas' record over the last 2 years has provided for a 40 percent increase each year in fund obligations—that is, direct funding obligations which entail true indications of activity. A steady increase at that rate would easily consume almost $10 billion, steady growth, as we have had, and some have been somewhat critical of that growth record not being as great as it could be. But maintaining the existing growth pattern would provide him with the capability of absorbing the full $10 billion.

With regard to his last point—and I will conclude on this point—that there are no effective private sector resources out there to implement a program in excess of $5 billion—I have obtained from the Congressional Research Service a thorough, detailed study that I am attaching as part of my testimony for your perusal, on the question of capacity of these industries.

The conclusion is that there is adequate capacity in the area of laboratory facilities, in the area of design, in the area of engineering and construction industries, to support a significantly expanded Superfund.

We have also independently heard from each and every one of those industry associations, and this is clearly on record that they are in a position to go forward.

I would just urge this committee to provide the same detailed analysis as to how this fund of at least $10.1 billion should be funded in a way that is equitable, that is certain, and certainly does not damage our overall industry.

I am prepared to be as cooperative as possible in sharing information from our committee as to what it is that we have learned with regard to the tax consequences, and certainly appreciate your continued cooperation.

I thank the gentleman.

[The prepared statement follows:]

STATEMENT OF HON. JAMES J. FLORIO, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW JERSEY

Mr. Chairman and members of the Committee, I want to thank you for the opportunity to appear before you today as you begin your consideration of legislation to reauthorize the Superfund program. As you know, the funding for this vital program will expire on October 1, 1985 with cleanup begun at only a small fraction of the nation's worst abandoned hazardous waste sites. All involved with the program—from the Chemical Manufacturers' Association to the Sierra Club—agree that it must be reauthorized, leaving us the crucial questions of when, how and how much.

As many will remember, the current Superfund law established a $1.6 billion fund for an initial five-year period. The President authorized the Environmental Protection Agency to begin the work of assessing the thousands of abandoned hazardous waste sites across the country, identifying the worst sites eligible for federal cleanup funds, and launching cleanup of those so designated. Revenues for the cleanup effort were generated by taxes on the chemical industry, plus a 12.5 percent appropriation from general federal tax revenues.

Although those of us who worked on the original legislation suspected that a second installment of the program would be necessary, few imagined the actual scope of the additional funding needs which face us today. EPA's gross mismanagement of the program in its early years, partnered with much improved data concerning the number and nature of the sites which must be cleaned up, lead any objective observer to the irrevocable conclusion that significantly expanded funding levels are crucial if we are to accomplish the goals we established back in 1980.

Consider the following basic Superfund statistics:

A study released recently by the National Campaign Against Toxic Hazards contains the first comprehensive accounting of where and how the current $1.6 billion Superfund has been spent. The study shows that less than 10 percent of the 800 sites on the National Priorities List will receive any money for actual cleanup during the first five years of the program. To date, EPA has managed to complete cleanup at only six priority sites.

EPA expects to place at least 2,200 sites on the National Priorities List someday. Even this apparently large number represents only a fraction of the 19,000 sites now known to exist across the country and both the General Accounting Office and state officials dispute EPA's estimates. GAO tells us that the 4,000 sites will end up on the list, while state officials say that the list will swell to some 7,000 sites over the long-term.

EPA says that the federal government's cleanup costs for the rest of the sites it expects to place on the National Priorities List could run as high as $23 billion, with a likely mid-range of $11.7 billion. Once again, GAO disagrees with EPA's estimates, telling us that the federal government's share of cleanup costs could be $39 billion and that, if the program continues at its current slow pace and inflation is factored into the equation, these cost estimates should double.

Based on all these facts and figures, state organizations (including the National Governors' Association) urge us to commit between $9 and $12 billion for five more years of a reauthorized program. The environmental community urges us to commit $13.5 billion over the next five-year period. Even the Chemical Manufacturers' Association has endorsed new funding levels of $4–5 billion, although the group acknowledges that cleanup of listed sites could take close to three decades at those levels. Finally, the Administration has proposed a funding level of some $5.3 billion for the second five-year reauthorization period.

As you evaluate the legislation, and the funding levels which are proposed, please keep in mind that Superfund must support several activities in addition to basic cleanup and none of these essential activities were included in the cost estimates I mentioned earlier. For example, the fund must support the administration of the basic Superfund program. The fund is also used to pay for emergency relief and removal actions in cases where waste site contamination is threatening the health of citizens in surrounding communities. Finally, the states have implored us to offer them some relief in the important area of long-term operation and maintenance of finished sites. Under current law, they must support all of these costs, but under legislation proposed in both the House and the Senate, the states would be given assistance with operation and maintenance costs during the first few years after a site is cleaned up.

Last year, in response to the disturbing statistics regarding the problems that still lie ahead of us and the clear need to reform this important program, the House voted 323 to 33 to reauthorize Superfund at a funding level of $10.1 billion for a second five-year period. This Committee was instrumental in arriving at that final figure, increasing the original $9.5 billion level I had proposed to the $10.1 billion level because of your concern that cleanup and the other mandates of Superfund be carried out effectively. Your sound and wise decision to increase the fund was based on an exercise of essentially conservative fiscal judgment: while the taxes which support the program now may hurt, we have no choice but to get on with the job as rapidly as possible before the mounting costs of this devastating environmental pollution climb out of our reach.

This year, many have suggested that this $10.1 billion funding level needs to be increased still further to take into account the mounting data concerning the true nature and scope of the waste site problem. Others in the Office of Management and Budget, EPA and elsewhere have expressed concern that the agency cannot spend such sums effectively.

I am convinced that there is a great deal of merit in the position not only that the basic structure of the program must be reformed so that EPA can manage such sums efficiently but also that more money is desperately needed for cleanup. However, we are also faced with the legislative reality that the funding sources for this program will run out on October 1, and we must arrive at a consensus quickly so that we can move forward with legislation in time to meet this impending deadline. Next week, I will introduce legislation modeled closely on last year's House-passed Superfund bill so that we can have such a consensus.

I would like to touch on two issues at the top of this and my Committee's agenda as we prepare to consider Superfund legislation: the funding mechanism we should use to support the program and EPA's ability to spend an expanded Superfund.

The final bill approved by the House supported the program through two basic sources: a continuation of the current feedstock tax system and an authorized appropriation from general tax revenues.

Under the House bill, each covered chemical and metal feedstock substance would be taxed an average of three percent of the sales price. All individual tax rates are capped at $30/ton so that a substance's relatively high sales price does not produce an inordinately high tax assessment. Imported feedstocks are taxed at the same levels. Exports are not taxed. In short, the funding mechanism developed by the Ways and Means Committee accomplishes the central goal of any Superfund tax system—guaranteeing a stable and effective source of revenue for the program.

I recognize that you will soon hear many other funding proposals put forward and we must all retain flexibility to evaluate such proposals carefully. Representatives Wyden and Schneider have put considerable effort into developing a workable waste end tax system and, on the Senate side, Senators Bradley, Mitchell and Chafee have developed some innovative broad-based tax proposals. While all of these proposals deserve serious attention, I urge you to also give complete consideration to the feedstock tax system you developed last year as a basic source of revenue for the fund.

The Chemical industry has argued that the most important negative economic effect of the higher taxes which have been proposed is the likelihood that such taxes will worsen an already troubling adverse trend in the U.S. balance of trade. Industry notes that even though Superfund taxes are imposed on imported feedstocks, the taxes can easily be avoided by those choosing to import the derivative chemical products of such feedstocks.

Several weeks ago, my Subcommittee held a hearing on this crucial issue. The testimony we received indicated that Superfund taxes are a relatively minor factor affecting the U.S. balance of trade; such other factors as the value of the dollar and sources of cheap energy abroad have a far greater impact on the overall trade picture. Nevertheless, witnesses urged us to develop a more effective Superfund import tax system. I am committed to working with Chairman Rostenkowski and the Committee to pursue this important initiative.

One other point about funding mechanisms deserves mention here. The Administration's Superfund proposal contains a fundamental departure from the approach we have historically used in calculating revenues for Superfund. It assumes that some $800 million of the reauthorized fund will be supplied primarily by actions to recover penalties and costs from private parties who are found liable for creating specific sites. In other words, the funding level raised by the taxes in the Administration's bill is only $4.5 billion, and the total funding level is only raised to $5.3 billion when you count the money from such speculative sources.

When we created Superfund in 1980, it was our clear goal and intent that the strong liability provisions in the law would enable the fund's $1.6 billion in tax revenues to be constantly replenished by lawsuits against private responsible parties. But we never based our decisions regarding the funding levels for the program on some vague anticipation of what those law suits would bring in.

The historical record of Superfund confirms the folly of counting such dollars before they are collected. An analysis prepared by EPA for my Subcommittee shows that although responsible parties have promised to pay $255 million in cleanup costs at priority sites to date, less than half of these sums have actually been spent on such cleanup. The total amount spent—some $113 million—is only a small fraction of the Superfund tax dollars committed to cleanup and other activities by EPA.

As for the argument that EPA cannot spend increased funding fast enough, I would be the first to agree that the current program must be fundamentally restructured in order to absorb the funding levels set in the legislation. In fact, the costs of failing to restructure the program so that accelerated cleanup can be accomplished are nearly unthinkable. At the current cleanup rate of six sites every four years, it could take 1,500 years to finish cleanup at the minimal number of 2,200 sites EPA expects to place on the National Priorities List someday. So basic reforms in the implementation of the program are clearly necessary and EPA Administrator Lee Thomas has already initiated several such changes.

Unfortunately, when it comes to projecting funding needs for Superfund over the next five years, Mr. Thomas—who generally exhibits great faith in the management capacity of his agency—suddenly experiences a crisis in confidence. In fact, the several members of this Committee who are also members of the Environment and Public Works Committee will remember that when he was first asked about funding levels last year, Mr. Thomas indicated that a level of $7.5 billion would be appropriate. But within a matter of days, and perhaps following some heated consultations with the Office of Management and Budget, he was back with a figure of some $5 billion as the most the agency could spend effeciently.

Mr. Thomas now attempts to justify his gloomy forecasts regarding EPA's ability to spend Superfund money on two grounds: first, that the agency lacks the personnel and management capacity to run a larger program, and second, that insufficient resources in such crucial private sector industries as commercial labs and engineering and design firms will inhibit the growth of the program.

The response to Mr. Thomas' first concern is relatively simple: Since Superfund can be used to support the agency's administrative expenses, he will be able—with an increased fund—to hire the personnel he needs to implement an expanded program. I have conducted my own analysis of Mr. Thomas' management capacity on the basis of his track record in running the Superfund program over the last two years. The analysis shows that if EPA only manages to maintain the steady rate of growth the program has experienced over that period, the agency should easily be able to spend $9.8 billion in cleanup monies over the next five years. It turns out that Mr. Thomas has been able to achieve a 40 percent increase *each year* in the funds obligated for cleanup; steady increases of the same magnitude over the next five years would consume a $9.8 billion fund.

To resolve the dispute over private sector resources, I asked the Congressional Research Service to conduct a detailed study of the future capacity of these industries. A copy of that study is attached to my testimony and I would ask that it be included in the record of this hearing. CRS found that adequate capacity exists in the laboratory, design, engineering and construction industries to support a significantly expanded Superfund. These independent findings should put to rest Mr. Thomas' fears that American industry lacks the resources to finish the cleanup job at an acceptable pace.

There is no environmental problem more important to the American people than the thousands of abandoned waste sites across the land. The facts supporting the need to extend and expand Superfund are irrefutable. Our only possible course—the only responsible course—is to act, and act decisively, to ensure the future of the program as quickly as possible.

Mr. Chairman, that completes my prepared testimony and I would be happy to answer any questions you may have.

CAPACITY TO EXPAND THE SUPERFUND: LABS, CONTRACTORS, AND QUALIFIED PERSONNEL

INTRODUCTION

The Superfund program [1] as enacted in 1980 to authorize the Federal Government to respond to hazardous substance spills and releases of hazardous substances from disposal sites. The taxing authority of the law expires at the end of fiscal year 1985, and a central issue of the reauthorization debate is how large the fund should be for the next five years. When passed in 1980, the taxes and the authorization for Federal appropriations were set at levels designed to raise $1.6 billion over the 1980–85 period. That amount is seen by virtually all interested parties as inadequate to address the cleanup problem, and current proposals to expand the fund are in the $5–10 billion range for the 1985–90 time period. A key question in deciding whether to set the fund at the upper or lower ends of that range, or somewhere in between, is how fast the money can be spent effectively by the Environmental Protection Agency (EPA), which is the program's lead agency.

To help answer that question, the House Energy and Commerce Committee's Subcommittee on Commerce, Transportation, and Tourism asked the Congressional Research Service to examine four key components of EPA's ability to spend: (1) the availability of laboratory capacity to analyze the number of samples that will be taken at Superfund sites; (2) the availability of contractors for design and construction of remedial actions; (3) the availability of scientific and technical personnel to meet the demands of an expanded Superfund; and (4) the availability of treatment, storage, and disposal capacity to manage the waste generated by an expanded cleanup program.

CRS analyzed these questions by reviewing reports and other available data provided by EPA, its contractors, the Army Corps of Engineers, State governments, major trade associations, and firms engaged in Superfund cleanups. In addition, CRS conducted approximately 40 telephone interviews with individuals knowledgeable about aspects of the program.

The major conclusions of our report are summarized in the next section, Principal Findings. A more general discussion of each question individually is provided in the ensuing chapters.

1. PRINCIPAL FINDINGS

The evidence reviewed for this report indicates that, with few exceptions, available facilities and personnel could support a substantial expansion of the Superfund program over the next five years. In particular, the evidence suggests that:

1. Current laboratory capacity could support a substantial increase in Superfund remedial actions beginning in FY 1987;
2. There is general agreement that there will not be a shortage of firms to undertake design and construction of remedial actions;
3. With few exceptions, there appear to be ample scientific and engineering personnel to carry out an expanded Superfund program; and
4. It is not clear whether the adequacy of waste treatment and disposal capacity will constrain the growth of Superfund spending.

A. Laboratory capacity

The EPA contract lab program (CLP), which analyzes most Superfund samples, "has doubled its demand on private sector analytical laboratories each year over the past four years." [2] In the current fiscal year, the program will analyze about 69,000 samples.

The rapid growth of the program has caused some management problems, but the overall quality of lab analyses appears to be good. EPA points with pride to the fact that it has not lost a single Superfund court case because of inadequate sampling and analysis.

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[1] The authorizing law is properly titled the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), Public Law 96–510.

[2] U.S. Environmental Protection Agency. Office of Solid Waste and Emergency Response. Extent of the Hazardous Release Problem and Future Funding Needs—CERCLA Section 301(a)(1)(C) Study: Final Report, [Washington, 1984], p. 3-11.

Because sampling is used to define the nature and extent of a site's problems, the number of samples taken is highest in the early phases of site inspection, removal, and remedial investigation. Under the Administration's proposal for reauthorizing Superfund, these activities would show a sharp decline in the period FY 1987–FY 1990 (see Table 1). Demand for sample analyses would peak at 75,810 in FY 1986, and would decline 63 percent by FY 1988, before leveling off.

Using the Administration's projections, this study estimates that the number of Remedial Investigations and Feasibility Studies could nearly triple by FY 1988, without increasing the current demand for lab analyses. In addition, current lab capacity could be expanded through better use of available facilities.

B. Contractors for design and construction

EPA projects a substantial increase in the number of remedial actions to be designed and constructed under the Superfund program beginning in the current fiscal year. The program will begin more design activities in FY 1985 than it did in FY 1981–1984 cumulatively. Construction starts in FY 1985 will be almost as many as in the previous four years. The Agency projects a further increase in both design and construction in FY 1986 and FY 1987 with activity leveling off in FY 1988 (see Table 2).

Despite the rapid increase in the number of remedial actions, there is general agreement that there will not be a shortage of firms to undertake design and construction. According to the American Consulting Engineers Council, over 300 firms have the direct or related experience to undertake Superfund remedial work. EPA, the Army Corps of Engineers, and the States have generally not experienced shortages of qualified firms.

TABLE 1.—EPA PROJECTIONS OF KEY SUPERFUND ACTIVITIES

Year	Total samples	Preliminary assessments	Site inspections	Removals	Remedial investigation/feasibility studies	
					Program [1]	Enforcement [1]
1984	62,416	3,774	1,265	204	97	36
1985	68,898	5,300	1,350	190	69	46
1986	75,810	5,500	1,488	190	78	52
1987	39,287	500	1,030	190	78	52
1988	27,985	100	50	190	78	52
1989	27,244	0	0	190	78	52
1990	27,244	0	0	190	78	52
1991	27,244	0	0	190	78	52
1992	27,244	0	0	190	78	52
1993	27,244	0	0	190	78	52
1994	27,244	0	0	190	78	52
1995	27,244	0	0	190	79	51

[1] Remedial investigation/feasibility studies (RI/FS) are conducted by two offices at EPA: the program office, if EPA anticipates a Fund-financed cleanup; the enforcement office, if EPA anticipates legal action to force a private party to clean up. The RI/FS is similar in either case, and in fact both offices use the same EPA contractors for the work. However, because of the greater likelihood of legal action, enforcement RI/FSs average 236 samples per site, whereas program RI/FSs average 179–213 samples each.

Source: EPA Superfund Budget Forecasting Model for all data except 1984 total samples. Latter is from ICF Incorporated, Superfund Laboratory Capacity Study, Draft Final Report (prepared for EPA Office of Emergency and Remedial Response, Hazardous Response Support Division, Washington, D.C.), September 14, 1984, p. 12.

TABLE 2.—SUPERFUND REMEDIAL DESIGN AND CONSTRUCTION PROJECTS, 1981–1995 (DATA REFER TO THE NUMBER OF PROJECTS STARTED IN EACH FISCAL YEAR)

Fiscal year	Design	Construction
1981–1984 (Cumulative total)	34	29
1985	64	25
1986	89	56
1987	88	92
1988	74	81
1989	74	74
1990	74	74
1991	74	74

TABLE 2.—SUPERFUND REMEDIAL DESIGN AND CONSTRUCTION PROJECTS, 1981–1995 (DATA REFER TO THE NUMBER OF PROJECTS STARTED IN EACH FISCAL YEAR)—Continued

Fiscal year	Design	Construction
1992	74	74
1993	74	74
1994	74	74
1995	74	74

Source: U.S. EPA, Superfund Budget Forecasting Model.

The major impediments to speeding construction activity have been administrative and procedural delays, not a shortage of bidders. EPA and the Army Corps of Engineers are attempting to improve procedures to shorten the contracting process.

C. Qualified personnel

Cleaning up hazardous waste sites is a new activity, and comparatively few individuals have the precise educational and professional skills desired for Superfund site assessment and cleanup work. It takes time to hire and train appropriate individuals—several months for hiring, and perhaps as much as a year of on the job training before new personnel will be fully productive.

Within these constraints, however, there appear with few exceptions to be ample scientific and engineering personnel with the basic academic credentials for Superfund work. In the broad categories of interest (civil and chemical engineers, chemists, and geologists), the National Science Foundation projects surpluses of personnel ranging from 13 to 31 percent under the most restrictive assumptions.[3] Among the more specialized occupational categories (toxicologists and hydrologists), hydrologists appear most likely to be in short supply, but several observers were optimistic that qualified personnel could be found.

D. Treatment, storage, and disposal capacity

A fourth potential constraint to Superfund expansion is the availability of adequate treatment, storage, and disposal capacity for the hazardous wastes now leaking from Superfund sites.

It is difficult to evaluate this concern, since EPA does not have projections of the volume of waste at Superfund sites. However, fragmentary information provided by the Agency suggests that the volume of waste to be removed for treatment or disposal off site is small enough that it does not now pose a significant demand on available waste treatment and disposal capacity.

At 11 Superfund sites for which EPA data were available, waste volume averaged approximately 3,000 tons per site.[4] If this average is typical of all Superfund sites, EPA's projected level of removals and remedial actions will generate a peak amount of 846,000 tons of waste to be managed in FY 1987, with a slight decline in subsequent years. This amount is approximately three-tenths of one percent of the annual volume of hazardous waste generated in the United States (264 million metric tonnes), or 9 percent of the hazardous waste managed by commercial waste management facilities (9.4 million tons).

Whether an increase in the Superfund program's size would strain waste management capacity would depend on the methods chosen to manage the waste. If the waste is shipped to off-site commercial facilities, a doubling or tripling of the number of remedial actions might increase the demand for commercial services by 5 to 10 percent at the same time that new RCRA requirements were constraining available capacity. If Superfund waste is managed on-site, however, an increase in program size would not necessarily be constrained by the availability of commercial waste management facilities.

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[3] National Science Foundation, "Projected Response of the Science, Engineering, and Technical Labor Market to Defense and Non-Defense Needs: 1982–1987," Special Report NSF 84-304. [Washington, 1984], Table B-12, p. 43.

[4] U.S. EPA, Office of Solid Waste, Waste Management and Economics Division, "Superfund Waste Disposal Evaluation," June 29, 1984. The waste volume estimate was derived from data on pp. 7 and 23 of the report.

2. AVAILABILITY OF CAPACITY IN THE SUPERFUND LABORATORY SUPPORT PROGRAM

In testimony before Congressional committees and in Agency reports, EPA has contended that the pace of remedial actions for the Superfund program is hampered by several factors, one of which is laboratory support.[5, 6] The Agency indicates that there is a high demand for analysis of many thousands of Superfund samples, and that EPA's need for rapid turnaround of high-quality, legally defensible analytical reports have, and will continue to, put a strain on analytical laboratory resources in the private sector.

Sampling and analysis are concentrated in the early phases of a Superfund response action, to determine what hazardous substances are present at a site, what media (soil, surface water, ground water, or air) are contaminated, and the extent to which the contamination has spread. These definitional phases of the program (preliminary assessment of sites, site inspections, and remedial investigation/feasibility studies) have grown explosively since FY83, placing heavy strains on EPA's laboratory support program. The Agency has met the growth in demand primarily through reliance on the private sector. In FY85, more than 80 percent of Superfund samples will be handled by the Agency's Contract Lab Program (CLP). The Agency has doubled the capabilities of the CLP in each of the last four fiscal years.[7]

Based on a telephone survey of three EPA staff and seven laboratory officials and on Agency documents (including an EPA contractor study on Superfund laboratory capacity), there is support for the view that EPA's concerns about the Superfund laboratory support program maybe misdirected. Most observers conclude that there are enough laboratories overall to perform analyses of Superfund and other hazardous samples. The difficulties lie in meeting EPA's requirements for rapid, high-volume, accurate analyses. Respondents from the private laboratory sector indicated that they are moving to accommodate EPA's analytical demands through expansion of their operations, but that this takes time to execute, even if the funds for expansion are available. Some important considerations that are perceived to influence the rate of laboratory expansion are the ability to hire and train quality laboratory personnel,[8] the ability to purchase analytical equipment, and the predictability of a sample workload.

Because the private laboratory sector seems to be expanding to meet the needs of the Superfund program, and because of the potential ability of EPA, non-EPA, State, local, and university laboratories to also become involved, the issue seems to be whether the demand for sample analysis will be maintained. Most private laboratory officials feel that the current backlog of samples will be relieved within the next few years as their laboratories complete expansion or as new laboratories become involved in the Superfund program.

EPA's Superfund Budget Forecasting Model indicates that the demand for Superfund samples will increase between FY84 and FY86 at a rate of about 10 percent/year (see Table 1). However, these same projections indicate that the sample demand will decrease in FY87 by 48 percent and an additional 29 percent in FY88, for a total decrease between FY86 and FY88 of 63 percent, before leveling off between FY89 and FY95. This drop in sample demand may be attributed to the completion of the sample collection activities in the preliminary assessment and site inspection phases of the Superfund program.

At the Administration's projected level of funding, then, there may likely be excess laboratory capacity in the private sector after FY86, which may cause financial strain on many of the laboratories that are expanding today to meet the projected sample demand. To maintain the sample demand, and to improve the pace of site cleanups, one possible solution would be to greatly expand the number of remedial investigation/feasibility studies (RI/FSs) undertaken by the Superfund program. For example, tripling the number of RI/FSs by FY88 would maintain the sample demand at roughly current levels. Increased funding of this part of the program may resolve the perceived sample decline.

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[5] Thomas, Lee. Testimony by the EPA Administrator before the Subcommittee on Commerce, Transportation, and Tourism, House Committee on Energy and Commerce, March 7, 1985. Washington, D.C.

[6] U.S. Environmental Protection Agency. Extent of the Hazardous Release Problem and Future Funding Needs; CERCLA Section 301(a)(1)(C) Study; Final Report. Office of Solid Waste and Emergency Response. December 1984. Washington, D.C. p. 3-11.

[7] Ibid.

[8] For further information on the availability of qualified personnel, see Chapter 4 of this report. The sources contacted are listed in the memoranda cited in footnotes 13 and 18, as well as in the citations listed throughout the report.

In the view of many contacted, some of EPA's activities in managing the laboratory program effort have contributed to the strain on laboratory support, and the Agency could improve the laboratories' current performance through some administrative changes. The final section of this chapter describes at some length the comments of private sector laboratories concerning management of the lab program and EPA's progress.

Background

EPA coordinates the laboratory support for the Superfund through the Contract Laboratory Program (CLP), which comprises private laboratories that have met stringent Agency quality-control requirements to perform a variety of inorganic, organic, and dioxin analyses.[9] Some of the contract laboratories do all three types of analyses, some two, and some only one type. By type and as of March 1, 1985, there were 18 inorganic, 31 organic, and 13 dioxin laboratories in the CLP.

The objective of the CLP is to provide legally defensible analytical results for use in supporting EPA enforcement actions. As such, the Agency believes that a high level of quality assurance and documentation is necessary for the program to be successful. The requirements for a laboratory to qualify are perceived to be very stringent: inspection of facilities to ensure that the equipment and staff are adequate, correct analysis of a test blind sample, and periodic audits of analytical reports by EPA staff and contractors. Once approved by EPA, the laboratories may then bid competitively for sample lots (generally 500–1,000 sample analyses per year). According to the EPA official in charge of the CLP, about 10 percent of the qualified laboratories do about 80 percent of the analytical work.

Samples collected at Superfund sites within each of EPA's ten regions are sent to regional sample control centers, which forward the samples to the contract laboratories under the direction of a contractor-operated sample management office in Alexandria, Va. The sample management office essentially acts as a clearinghouse for the samples, coordinating their allotment to each laboratory, monitoring analytical reports, and maintaining the CLP records.

Laboratory resources

Several types of analytical laboratories exist: university, local and State government, Federal government (non-EPA and EPA), and private. The EPA contractor study on Superfund laboratory capacity provides an overview of the potential input of each type of laboratory to the Superfund program.

(a) *University laboratories.*—The EPA contractor study indicated that university laboratories may not be good candidates for Superfund work because they are not set up as businesses and, as a result, may not be able to offer specialized, high-volume, low-price services without support from EPA.[10]

(b) *Local laboratories.*—The EPA contractor study indicated that local government laboratories may have potential for additional capacity, but at a smaller scale than private laboratories could provide.[11]

(c) *State laboratories.*—The EPA contractor study indicated that State laboratories might be able to support the Superfund laboratory program, but that nearly all State laboratories have little or no excess capacity and many have a backlog of work. To accommodate the excess capacity, most of the laboratories would need more staff and equipment—commodities that most State budgets do not allow for in a period of fiscal restraint.[12]

One survey respondent from a State laboratory contended that the States would welcome more involvement in the Superfund analytical program and estimated that half the States would be able to contribute.[13] He felt that the major impediment to State involvement is that the EPA Office of General Counsel has viewed that Superfund monies cannot be used for equipment purchase.

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[9] U.S. Environmental Protection Agency. Users Guide for the Contract Laboratory Program. Office of Emergency and Remedial Response, Hazardous Response Support Division, Washington, D.C., 1984.

[10] ICF Incorporated. Superfund Laboratory Capacity Study; Draft Final Report. Prepared for EPA Office of Emergency and Remedial Response, Hazardous Response Support Division, Washington, D.C. September 14, 1984. p. A-14 to A-15.

[11] ICF Incorporated, p. A-16 to A-17.

[12] ICF Incorporated, p. A-18 to A-20.

[13] U.S. Library of Congress. Congressional Research Service. Information on Analytical Laboratory Resources to Support the Superfund Remedial Program. Memorandum to the Subcommittee on Commerce, Transportation, and Tourism, House Committee on Energy and Commerce, by Donald V. Feliciano, March 4, 1985. Washington, 1985. p. 2.

(d) *Non-EPA Federal Laboratories.*—The EPA contractor study indicated that Federal laboratories were not equipped for rapid turnaround of high volumes of samples or did not have excess capacity.[14] However, two laboratories, the Food and Drug Administration laboratory in Dallas and the Tennessee Valley Authority laboratory in Chattanooga, expressed an interest in and the ability to perform Superfund analyses.

(e) *EPA Laboratories.*—In FY84, EPA laboratories within the Environmental Services Division contributed about 17 percent of the laboratory services used by Superfund.[15] The EPA contractor study indicated that expanded laboratory capacity is necessary if this division is to support the Superfund program, particularly because of the finding that many laboratories were underutilized because of insufficient staff. The study concluded that the addition of about 38 full-time employees for Superfund laboratory analysis would allow the division to serve Superfund at full facility capacity.

One EPA respondent to the telephone survey agreed with the Agency's contentions that the analytical process is slow, but believed that EPA could greatly improve its own in-house laboratory support for the Superfund program.[16] For example, in the EPA Cincinnati laboratory complex, he said that there are adequate equipment and personnel to do Superfund analyses, but that the Agency has not provided the space to set up shop. He believes that with the addition of one floor of laboratory space, the Agency could double the laboratory activity it currently provides for Superfund analysis.

(f) *Private laboratories.*—According to one telephone respondent (who helped to develop the CLP while an EPA employee and is now president of a private laboratory), EPA intended from the start of the Superfund program that the bulk of the laboratory work was to be done by the private sector.[17] The rationale for this was that the private sector could gear up to the needs of the program more quickly and cost efficiently than the Federal Government could.

As a result, 80 percent of the Superfund laboratory support is handled by the 60–70 specialized private laboratories participating in the CLP. As with the other laboratories surveyed, private laboratories have had to expand and modify their analytical operations to accommodate the unique requirements of the Agency. Not all laboratories are able to participate in the CLP because of the stringent EPA requirements; the EPA official in charge of the CLP stated that over half of the interested laboratories do not meet the Agency's criteria.[18] Should the laboratory program expand further, EPA expects that the laboratories currently under contract will expand to meet the increased need and be complemented by new laboratories joining the CLP.

Analysis of laboratory resources

Based on conversations with EPA staff and laboratory personnel and on the EPA contractor study, the current Superfund sample supply and the stringent EPA requirements are straining the ability of the laboratories to perform. Contractual time requirements for sample turnaround are 30 days; however, the EPA official overseeing the CLP stated that the average turnaround time is about 45 days.[19] If 15 days late is the average, this would seem to indicate that many of the laboratories experience even later delays. The EPA official further stated that a backlog of samples for analysis exists. During a recent EPA offering of 100 bid lots of samples, only 26 were awarded to private laboratories.

EPA officials and CLP participants generally agree that the delays in the CLP are related to the growing pains of a sophisticated program. EPA contends that it is trying to run this massive effort of analyzing thousands of samples as a business and, as such, must insist that the laboratories clearly understand and adhere to the contractual requirements. Furthermore, the large workload and the need to have data that are legally defensible require the Agency to make the laboratories analyze samples on a fast and accurate basis and then report the results in a manner that they have never experienced before. While many laboratories are not pleased with EPA's requirements, most acknowledge that they are impressed with the Agency's quality control and its monitoring of laboratory performance.

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[14] ICF Incorporated, p. A–21 to A–23.

[15] ICF Incorporated, p. 4–6.

[16] U.S. Library of Congress, Information on Analytical Laboratory Resources, p. 6.

[17] Telephone conversation with Dr. Mark Carter, president of Rocky Mountain Analytical Lab, Inc., Arvada, CO, March 19, 1985.

[18] U.S. Library of Congress. Congressional Research Service. Information on Analytical Laboratory Resources to Support the Superfund Remedial Program—Environmental Protection Agency Comments. Memorandum to the Subcommittee on Commerce, Transportation, and Tourism, House Committee on Energy and Commerce, by Donald V. Feliciano, March 6, 1985. Washington, 1985. p. 2.

[19] *Ibid.*, p. 3.

Most private laboratory officials who responded are in the process of expanding their operations to meet the projected EPA demand and believe that they will be able to manage the workload and alleviate the backlog of samples within the next 18–24 months. These laboratories and the addition of new laboratories to the CLP should be able to cope with the sample demand.

Respondents believe that because the CLP effort is constantly evolving and is a learning experience for both EPA and the laboratory industry, there is a need for EPA to be more flexible in some of its requirements. Such modifications, some private laboratory officials state, will improve their current performance and will not affect the quality control that EPA desires. A discussion of possible areas for program improvement may be found later in this chapter.

Sample supply and demand

According to the EPA contractor study on Superfund laboratory capacity, the demand for laboratory analysis is expected to grow 23 percent during FY85 and a further 12 percent in FY86, based on data concerning average samples per site for the period FY81 through FY84.[20] The projected number of samples to be analyzed in FY85 is 101,000, according to testimony by EPA Superfund Office Director William Hedeman,[21] although Agency documents suggest much less.

In developing its proposals for reauthorization of Superfund, EPA used a computer model called the Superfund Budget Forecasting Model. This model projected numbers of key activities for 1985–1995, and used them to develop cost estimates both for the life of the Superfund program and for the 1986–1990 period. The number of samples to be analyzed was one of the key activities for which the model provides data. The number of samples projected by the EPA model are shown in Table 1. As may be seen in the table, it would appear that the demand for Superfund samples will increase between FY84 and FY86 at a growth of about 10 percent/year, to an eventual peak of nearly 76,000 samples/year. Beyond that time, however, the projections indicate that the sample demand will decrease in FY87 by 48 percent and an additional 29 percent in FY88, for a total decrease between FY86 and FY88 of 63 percent, before leveling off between FY89 and FY95.

As may be seen in Table 1, the projected drop in sample demand may be ascribed to the completion of the preliminary assessment and site inspection phases of the Superfund cleanup during FY87 and FY88. Typical numbers of samples collected during a Superfund cleanup effort are shown in Table 3.

TABLE 3.—*Typical numbers of samples collected during a Superfund cleanup effort*

Cleanup phase:	
Preliminary assessment	1
Site inspection	16–29
Removal	45–76
Remedial investigation/feasibility studies:	
Program	179–213
Enforcement (avg.)	213

Source: ICF Incorporated. Superfund Laboratory Capacity Study; Draft Final Report. Prepared for EPA Office of Emergency and Remedial Response, Hazardous Response Support Division, Washington, D.C., September 14, 1984.

At the current rate of funding, there may likely be excess laboratory capacity in the private sector after FY86. If the projections hold true, laboratories will have expanded to meet a demand that will not be there. Several laboratories in the process of expanding their operations now have financed the expansion through five-year loans. For these laboratories and others, the deficit of samples beginning in FY87 could create significant financial problems.

Many laboratory officials contacted by telephone were surprised by the projected reduction in samples after FY86. They stated that EPA had assured them of steady growth of the laboratory program for the next few years, but none had been told of a possible drop in samples. One respondent stated that if this information was widely known throughout the laboratory sector, EPA would have a difficult time obtaining laboratories for the CLP and current CLP participants would likely drop out of the EPA program.[22] Another respondent indicated that many laboratories probably would respond to this deficit by immediately raising their current analytical prices.[23]

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[20] ICF Incorporated, p. 5.

[21] Hedeman, William. Testimony by the Director of the EPA Office of Emergency and Remedial Response before the Subcommittee on Commerce, Transportation, and Tourism, House Committee on Energy and Commerce, March 7, 1985, Washington, D.C. Both the ICF study on Superfund Laboratory Capacity and the Agency's Superfund Budget Forecasting Model predict the number of samples at approximately 69,000 in FY85.

Some possible explanations emerge for why EPA would promote expansion of the CLP in view of possible excess laboratory capacity beginning in FY87. First, the Agency may be assuming that Congress will increase the funding for the Superfund program and thus give EPA the opportunity to increase its sample collection activities in the removal and RI/FS bility study phases of the program. Second, EPA may be moving to shift more cleanup responsibility (and thus more sample collection responsibility as well) to the responsible parties. Third, in the view of some respondents, EPA may not understand the financial and business nature of the private laboratory sector enough to be aware of what a reduced number of samples may mean to many laboratories currently borrowing money to expand their operations. CRS was unable to establish EPA's position on the question of excess laboratory capacity.

Thus, under the Administration's projected level of funding, there may likely be excess laboratory capacity in the contract labs beginning in FY87, which may cause a financial strain on many of the laboratories that are currently expanding to meet the EPA-projected sample demand. To maintain the sample demand, and to improve the cleanup progress of the Superfund program in FY87 and beyond, one possible solution would be to greatly expand the number of removals and remedial investigation/feasibility studies undertaken by the program. For example, if the number of RI/FSs were tripled, sample demand would exceed 80,000 per year, which is in line with the projected laboratory capacity that will be attained within the next few years in the CLP.

Management of the CLP program

Finally, interviews with private laboratories reveal a number of criticisms concerning EPA's management of the CLP program. The criticisms fall into four general categories.

(a) *EPA has been slow to recognize the costs of sample analysis.*—Some private laboratory officials feel that EPA lost valuable time in the Superfund laboratory effort because the Agency was slow in:

Recognizing the prices that private laboratories charge for sample analysis and the need to show their investors that they are making a profit;

Responding to the laboratories' contention that their costs for analysis of Superfund samples were higher because EPA required more complex protocols and reporting requirements; and

Bringing up EPA prices to be competitive with the market.[24] [25] [26]

Private laboratories have a variety of clients. In the case of the laboratories involved with the CLP, several do Superfund-related analyses for industrial and State clients as well as EPA. At times when the demands of several clients compete for a laboratory's efforts, the laboratory often analyzes the non-EPA samples first because the procedures are simpler and quicker, non-EPA clients pay more for their samples to be analyzed, and the resultant profits from this work outweigh the penalties incurred through late performance on EPA samples. In effect, when EPA competes with other clients, the Agency often will get bumped.

The Agency recently has responded to the private laboratories' concern about sample costs. As Superfund Office Director William Hedeman pointed out recently, where an organic sample cost was $150 four years ago, the Agency now pays up to $2,000 per sample to CLP laboratories.[27] The average cost for organic samples is between $700 and $1,200/sample, according to EPA.

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[22] Telephone conversation with Dr. Mark Carter, president of Rocky Mountain Analytical Lab, Inc., Arvada, CO, March 26, 1985.

[23] Telephone conversation with Mr. Swep Davis, vice president/treasurer of Environmental Certification and Testing Corp., Edison, NJ, March 26, 1985.

[24] Telephone conversation with Dr. Mark Carter, March 19, 1985.

[25] Telephone conversation with Dr. Paul Taylor, president of California Analytical Laboratories, Inc., West Sacramento, California, March 14, 1985.

[26] Telephone conversation with Mr. Swep Davis, vice president/treasurer of Environmental Testing and Certification Corp., Edison, NJ, March 11, 1985.

[27] Hedeman, testimony before the Subcommittee on Commerce, Transportation and Tourism, March 7, 1985.

(b) *EPA's 30-day turnaround for sample analysis is unrealistic.*—From the telephone survey, several variables come into play in the analysis of Superfund samples that will affect the timeliness of a laboratory's performance:

Even the most sophisticated analytical setup can only perform about a dozen analyses per day (for example, a sample may contain hundreds of different chemicals, each of which would need to be first extracted before it could be analyzed);

To be responsive to EPA's requirements, several quality control steps come into play that may delay analytical time (for example, calibration of equipment);

There is no flexibility in the schedule to compensate for equipment down-time, employee sickness, equipment purchase, employee training, or EPA change orders; and

EPA requires an individual analytical report for each sample taken from a Superfund site (some sites may require over a hundred samples) and three copies of each report to be submitted.

One respondent felt that EPA should change the 30-day requirement simply because it is obvious from experience that most CLP laboratories have been unable to meet the deadline.[28] The norm of 45 days for sample turnaround implies that some laboratories are even requiring more than 45 days to complete sample analysis. The same respondent said that his was one of only a few CLP laboratories that generally meets the 30-day requirement, but that his laboratory was only able to do the work by having three work shifts per day. He feels that 40 days' turnaround would be more realistic, especially because he could not see how 10 extra days would make that much difference in the progress of a long-term program.

The EPA official who administers the CLP agrees that the 30-day turnaround for samples is "unrealistic," but that the pressure for rapid turnaround has come from the EPA regional clients.[29] He pointed out, however, that the Agency is trying to run the CLP as a business and requires that the CLP laboratories comply with the terms of the contracts. Furthermore, he believes that each laboratory has been made fully aware of the stringent requirements before it commits to analyzing samples. He observes that there is flexibility in the CLP procedures in that laboratories have the option to accept a minimum number of samples per month (usually 125), if they so choose. Also, if EPA issues a change order that affects a laboratory's ability to perform, the laboratory may file a claim for reimbursement; this, however, may take several months to resolve.

To ensure performance, EPA has a system of rewards and penalties for early and late turnaround. In the past, the Agency gave 1 percent (of price) bonuses for each day of early delivery and 1 percent penalties for each day of late delivery. For example, two days late resulted in a 2 percent penalty. Recently, EPA changed the percentage to 10 percent bonus for one or more days early, coupled with a 10 percent penalty for the first day late, followed by a 2 percent/day penalty for each additional day.

All telephone respondents said that the bonus/penalty system does not work. For example, under the previous system a laboratory knew that it would likely be 15 days late and thus incur a 15 percent penalty. Even if the laboratory could complete the work in 29 days, the bonus of 1 percent was not much incentive to make the extra effort to be early. CRS was unable to ascertain EPA's position on the effectiveness of the bonus/penalty system. The Agency has attempted to improve the incentive with the change to a 10 percent bonus. However, while the carrot has gotten bigger, so has the stick: regardless of how quickly a laboratory completes its analyses, the reward is still 10 percent, compared with a compounding 2 percent/day penalty beyond one day for late work.

One respondent contends that the penalty system will backfire on EPA.[30] According to him, some laboratories—anticipating that they will be several days late in completing analyses—figure the possible penalty into their bids for the work so that they still will realize a profit.

Another respondent feels that a lot of the backlog of samples could be alleviated if EPA would simplify some of its analytical protocols with respect to "simpler" samples.[31] The respondent believes that many of the samples may not need to be analyzed for all 114 compounds in a full-scale organic analysis. He feels that simpler protocols for simpler samples would greatly reduce the backlog of samples.

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[28] Telephone conversation with Dr. Mark Carter, March 19, 1985.

[29] U.S. Library of Congress, Information on Analytical Laboratory Resources—EPA Comments, p. 3-4.

[30] Telephone conversation with Dr. Mark Carter, March 19, 1985.

[31] Telephone conversation with Dr. Paul Taylor, March 14, 1985.

(c) *EPA's reporting requirements are excessive.*—The telephone respondents agre that EPA's paperwork requirements for the CLP create a strain on laboratory performance to support the Superfund program. Some believe that the Agency's request for inch-thick, single-sample analytical reports is excessive, and the problem is compounded by the requirement for the submittal of three copies of each analytical report. One respondent indicated that he recently invested in the top-of-the-line photocopy equipment to cope with his copying backlog, but that he would rather have used the money to buy more analytical equipment so that he could process more samples.[32]

Another respondent indicated that a typical analytical report on 20 samples for his non-EPA clients required about one-tenth the number of pages as a similar EPA analytical report would have required.[33] He feels that the three-copy requirement creates duplicative work. Copies are forwarded to the EPA regional client (for results), the EPA Las Vegas Laboratory (for quality control checks), and the sample management office (for administrative purposes). He believes that EPA could lessen the paperwork volume by considering electronic data transfer systems or by having the quality control staff check up on laboratories through spot visits to the facility for more accurate assessments of analytical performance.

The same respondent expressed concern that EPA's reporting requirements are prompting some of his industrial clients to request similar reports. He feels that this may start a trend whereby EPA and the industries may start competing to see who has the thicker report. He viewed that both sides could probably ease up on their reporting requirements without adverse effect. It should be noted that all respondents feel that the EPA requirements have led to the highest degree of quality control.

The EPA official responsible for the CLP believes that the potential usage of any analytical report during litigation compels the Agency to make sure that such reports will stand up in court.[34] He points out that EPA has never lost a court case because of faulty analytical reports. Of interest, none of the telephone respondents could think of any lawsuits where their reports for non-EPA clients were found to be in error either.

(d) *EPA's sample workload is not dependable.*—To successfully bid on EPA sample lots, a private laboratory must ensure that it has personnel, analytical equipment, space, and laboratory time to meet the projected sample workload, all of which represents out-of-pocket expenses to the laboratory. Several respondents indicate that EPA's dependability to provide a constant sample workload is highly variable, in terms of time of the year and the number received at any time. One respondent stated that his laboratory would experience no work for several months (he cited losses of $300,000/month), and then only receive 300 of 1,000 promised samples all at the same time and then be required to analyze these within the 30-day limit.[35]

Another respondent referred to what he called the "dioxin fiasco."[36] When dioxin became a major concern for the Agency, EPA projected a large number of samples would need to be analyzed. Several laboratories put together very specialized dioxin analytical setups and successfully bid for dioxin sample lots. Yet, the estimated number of samples did not follow. The respondent estimates that his laboratory is now analyzing one-tenth of the samples that EPA promised.

The EPA official in charge of the CLP is aware of the comments about inconsistent workloads.[37] He stated that it is difficult to predict how many samples may be collected from a Superfund site and when they will be collected. Apparently, part of this problem has to do with seasonal changes whereby few, if any, samples are collected in some areas during the winter months. The Agency has attempted to resolve this situation by encouraging southern regions to sample during the winter (reducing the summer peak) and by forcing EPA regions to lose their CLP laboratory space that is allocated to them during peak periods if samples do not arrive when scheduled.[38]

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[32] Ibid.

[33] Telephone conversation with Dr. Mark Carter, March 19, 1985.

[34] U.S. Library of Congress, Information on Analytical Laboratory Resources—EPA Comments, p. 3.

[35] U.S. Library of Congress, Information on Analytical Laboratory Resources, p. 3.

[36] Telephone conversation with Dr. Mark Carter, March 19, 1985.

[37] U.S. Library of Congress, Information of Analytical Laboratory Resources—EPA comments, p. 3.

[38] ICF Incorporated, p. A-9.

According to one respondent, perhaps the most significant ramification of EPA's inconsistent performance is that it, in turn, affects the credibility of the laboratory with its investors and, in particular, with its bank.[39] For a private laboratory to finance the expansion of its operations, it needs to demonstrate to its investors and lenders that there is an expanded and consistent demand for the laboratory's services. If EPA does not provide the promised samples for analysis, a laboratory loses money, which may affect its ability to obtain credit from its bankers.

CONCLUSION

Nearly everyone interviewed believed that increased funding will help to improve the performance of the CLP, but most cautioned that "a quick fix" should not be expected. There appear to be an adequate number of laboratories in the United States to manage the projected Superfund sample workload through expansion of their operations. With the addition of new laboratories to the CLP, most respondents believe that the backlog of samples will be alleviated as soon as new equipment can be procured and new staff hired and trained.

Additionally, there is interest within non-EPA Federal, State, local, and university laboratories to support the effort provided that they are able to expand to meet the requirements of the program. In each case, this will require funds for additional facilities and staff, money that will have to come from other sources than the Superfund because of EPA's interpretation of the uses of Superfund monies.

For the private laboratories, whose source of funds must come from private capital, the potential for financing expansion seems strong as long as EPA can predict that the demand for laboratory support will be constant and long term. With a constant supply of work, financial institutions will be more inclined to loan the laboratories money for expansion, and the laboratories will be able to direct part of their profits into expansion as well. While some new laboratories are expected to tap into the Superfund sample market, it is expected that current CLP laboratories will expand and be able to handle the bulk of the increased workload.

Yet EPA is not projecting a constant supply of work in the years beyond FY 1986. At its projected rate of Superfund spending ($5.3 billion for the period FY86–FY90), the number of samples to be analyzed would sharply decline beginning in FY 1987.

3. AVAILABILITY OF CONTRACTORS FOR REMEDIAL DESIGN AND CONSTRUCTION ACTIVITIES UNDER SUPERFUND

A second aspect of the debate over the pace of Superfund spending is whether there will be a shortage of contractors for design and construction of remedial actions.[40] The selection of a remedy and the resulting design and construction of remedial actions come after several years of assessment, remedial investigation, and feasibility study. As of the end of FY 1984, only 34 Superfund sites had proceeded to the design phase and 29 to the construction phase.[41]

As shown in Table 2, however, EPA projects a substantial increase in the number of design and construction activities beginning in FY 1985 and continuing through FY 1987 before the program achieves a steady state slightly below the 1987 pace. The program will begin more design activities in FY 1985 than it did in FY 1981–1984 cumulatively. Construction starts in FY 1985 will be almost as many as in the previous four years.

Despite the rapid increase in the number of remedial actions, there is general agreement that there will be no shortage of bidders for Superfund design and construction work. According to the American Consulting Engineers Council, over 300 firms have the direct or related experience to undertake Superfund remedial work.[42] EPA, the Army Corps of Engineers, and the States have generally not experienced shortages of qualified firms.

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[39] Telephone conversation with Dr. Mark Carter, March 19, 1985.

[40] EPA did not raise this issue directly in the "301" studies, and a check with the Superfund Director's office earlier this year produced the comment that "There has been no shortage of bids from contractors for cleanup work." [Interview with Linda Garczynski, U.S. EPA, Office of Emergency and Remedial Response, January 17, 1985] Nevertheless, given the projected growth in the number of design and construction projects, the availability of contractors seemed a reasonable question to raise concerning future program activity.

[41] U.S. Environmental Protection Agency. Justification of Appropriation Estimates for Committee on Appropriations, Fiscal Year 1986. February 1985. p. SF-7.

[42] Letter to Hon. James Florio, Subcommittee on Commerce, Transportation, and Tourism, House Energy and Commerce Committee. March 7, 1985. p. 1.

The State of California, for example, recently requested bidders for work at 50 sites that the State will clean up (sites not on the National Priorities List). According to Lache McClenahan of the State's Department of Health Services, about 20 firms bid on the work. Of the 20, 12–14 were considered qualified based on their expertise. Nine of these firms were selected, based on cost. Mr. McClenahan felt it was "a pretty impressive pool of contractors." [43]

Remedial actions paid for by Superfund can be overseen either by the State government or, if it declines, by the U.S. Army Corps of Engineers. Rather than select a pool of contractors, as California has done, the Corps selects its contractors on a site-by-site basis—a more time-consuming process, but one that the Corps feels makes more firms able to compete for the work. The Corps' Missouri River District oversees the contracting. According to Bill Dreibelbiss of that office, the Corps has awarded 12 construction contracts and has had an average of 8 bidders on each.[44]

The Corps also oversees the award of design contracts for Federal lead sites, and has awarded about 20 of these contracts. Until recently, each design was also contracted separately. As shown in Table 4, the Corps has generally had a large number of bidders for this work, even though many of the projects were designated "small business set-asides."

TABLE 4.—INFORMATION CONCERNING DESIGN CONTRACT AWARDS BY THE ARMY CORPS OF ENGINEERS

Name of site	Number of bidders	Small Business set-aside?	Awarded to	Amount
Adex, IA	19	Yes	Eugene A. Hickock & Assoc., Wayzata, MN.	248,000
Chemical Control, New Jersey	3	Yes	Earth Resources Consultants, Inc., Decatur, GA.	39,695
Krysowati Farm, New Jersey	21	Yes	Wm. F. Cosulich &Assoc., Woodbury, NY.	163,939
Lone Pine, New Jersey	27	No	D'Appolonia, Pittsburgh, PA	850,000
Bridgeport Rental & Oil, New Jersey	27	No	TAMS, NY, NY	2,000,000 +
Charles-George, MA	14	Yes	Hoyle-Tanner & Assoc., Londonderry, NH.	230,622
Globe, AZ	16	Yes	Cella-Barr & Assoc., Phoenix, AZ	134,595
Matthews Electro-plating, Virginia	14	Yes	Resource Applications, Vienna, VA	87,000
Outboard Marine Corp., Illinois	17	Yes	Warzyn Engineering, Inc., Madison, WI.	1,195,000
Resolve, MA	21	Yes	Wehran Engineering, Middletown, NY	116,938
Charlevoix, MI	23	Yes	McNamee, Porter, & Seeley, Ann Arbor, Mich..	174,339
Lehigh Electric (Phase II), Pennsylvania.	([1])	No	Weston Consultants, Westchester, PA	108,575
Open-end A/E Services (Kansas City).	50	No	Henningson, Durham & Richardson, Omaha, NE.	N.A.
Open-end A/E Services (Omaha)	20	No	Woodward, Clyde, Omaha, NE	N.A.

[1] Sole source.

Source: Telephone conversation with Bill Dreibelbiss Missouri River Division, U.S. Army Corps of Engineers. March 20. 1985.

The major impediments to speeding construction activity have been administrative and procedural delays, not a shortage of bidders. EPA and the Army Corps of Engineers are attempting to improve procedures to shorten the contracting process. For example, the Corps has recently awarded two open-ended contracts for designs at multiple sites. One contract attracted 20 bidders; the other had 50. The availability of the two open-ended contracts should speed the assignment of work.[45]

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[43] Telephone conversation with Lache McClenahan, Department of Health Services, State of California. February 28, 1985.

[44] Telephone conversation with Bill Dreibelbiss, Missouri River Division, U.S. Army Corps of Engineers. February 28, 1985. The lowest number of bidders was 2; the highest was 13. He was not able to explain why there were so few bidders for the one site.

[45] Telephone conversations with Bill Dreibelbiss, U.S. Army Corps of Engineers, February 28 and March 20, 1985. Mr. Dreibilbiss noted that award of contracts is often delayed by difficulty

Continued

The Corps was unable to estimate how big the pool of potential contractors is, but Mr. Dreibelbiss estimated that the Corps notifies approximately 500 firms concerning Superfund construction work.[46] Not all of these can do the work, and not all are national firms (i.e., some would only be interested in work in specific geographical areas).

Nevertheless, Mr. Dreibelbiss seemed more impressed with the smallness of the program's demands on available resources to date than with the size of projected demand. He noted that the Corps had concentrated the contracting in a single location (the Missouri River District), because they didn't feel there would be enough work to support a nationwide effort. He noted that, to date, there have only been two dozen designs to spread among the Corps' 30 divisions, and that only about 35 Corps employees deal with Superfund. Unless there were a large concentration of work in a single geographic area, he thought the Corps would have no problem overseeing 100 sites per year.

Thus, there appears to be general agreement—which is supported by available data—that expansion of the Superfund program will not be constrained by the availability of contractors for design and construction. A related question, however, is whether the contractors and the State and Federal agencies conducting oversight will be able to secure sufficient qualified personnel to support an expanded program. We turn to this question in the next chapter.

4. AVAILABILITY OF QUALIFIED PERSONNEL TO DEAL WITH SITE CLEANUP UNDER THE SUPERFUND PROGRAM [47]

A third aspect of the debate over EPA's spending pace is whether there are enough scientific and technical personnel to meet the demands of an expanded Superfund program. For example, in one of the studies required by CERCLA and released by EPA in December 1984,[48] the Agency listed several constraints which could affect the pace of the cleanup effort. Under the heading "Special Expertise," the report said:

> A final factor is the extent to which specialized professionals, such as chemists, toxicologists and hydrologists become available to address technical problems associated with site cleanup. EPA has encountered a shortage of experienced personnel with specialized skills. For example, it takes years for a chemist to become fully experienced in techniques of operating and interpreting the data output from highly specialized laboratory equipment. It also takes years for toxicologists to develop and interpret much needed information on the effects of chemical substances on human health and the environment. While the federal and state governments and private industry may develop the administrative capability to initiate action at many sites, the quality of information used to make decisions and the rate at which decisions can be made will be seriously hampered if these critical skills remain in short supply.[49]

This paper examines the issue of the availability of qualified personnel. It is based on manpower studies published within the last year by the National Science Foundation and by the Bureau of Labor Statistics (U.S. Department of Labor), and on telephone interviews conducted from January to March, 1985. A contract study prepared for the Office of Technology Assessment (OTA) was also reviewed.[50] The author spoke with officials of the following associations: American Academy of Environmental Engineers, American Association for the Advancement of Science, American Chemical Society, American Geophysical Union, American Institute of Hydrology, Association of State and Territorial Solid Waste Management Officials, Chemical Industry Institute of Toxicology, Hazardous Waste Treatment Council, National Society of Professional Engineers, and Society of Toxicology. Also interviewed were present and former State hazardous waste officials of California, Illinois, Maryland, and Massachusetts; and officers of four firms engaged in consulting engineering and

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in deciding which of several alternative remedies will be chosen. He also noted that EPA has criticized the Corps for being slow to get contractors on board.

[46] Ibid.

[47] An earlier version of this chapter, with the same title, appeared as CRS White Paper 85-602 ENR, on March 5, 1985.

[48] U.S. Environmental Protection Agency. Office of Solid Waste and Emergency Response. Extent of the Hazardous Release Problem and Future Funding Needs—CERCLA Section 301(a)(1)(C) Study: Final Report. [Washington, 1984] Various pagings.

[49] Ibid., p. 3-12.

[50] Dr. A. Keith Turner. Potential for Future Shortages of Technical Personnel for National Clean-up of Uncontrolled Hazardous Waste Sites—Final Report. (Washington), U.S. Office of Technology Assessment, 1984. 145 p.

hazardous waste treatment, including two of EPA's three zone contractors for the Superfund program. In all, 23 individuals were interviewed.

Adjusting to emerging environmental problems

At the outset, it should be recognized that cleaning up hazardous waste sites that are releasing contaminants is a new activity, and one which presents technical problems that have never been faced before. Several people pointed out that most of the problems encountered are ground water problems and the contaminants are insoluble organic chemicals. Little is known of their behavior as they move through (or attach themselves to) soil and fractured rock. There are both physical and chemical interactions occurring, and the data base on these is minimal. Of the synergism of the various compounds found at the disposal sites, very little is known. For the engineer, not only is the work a significant departure from structural and foundation work, or design of water treatment plants, but each waste site is different from its predecessors to a greater degree than is true in those other areas. As a result, those involved in cleanup are constantly pushing forward the state-of-the-art.[51]

Since we are in an emerging technology situation there are, understandably, comparatively few individuals available with the precise educational and professional backgrounds desired. In this sense the 1984 EPA report is correct. On the other hand, regardless of who is hired the problems are the same, and the constraints of inadequate information are no different. Looked at in this light, where everyone in the Superfund program is learning, what is needed is an individual "with a good head on his shoulders, . . . [someone who] has learned the discipline of learning." [52] And of course, there were even fewer experienced people available when the Superfund Act was passed in 1980, and those involved in the program had to engage in a certain amount of training of their personnel.

The two zone contractors, NUS Corporation and CH2M Hill, Inc., both made this point, as did a Maryland State official. According to William Wallace, CH2M Hill's director of solid and hazardous waste management, the company originally had 20–30 people who were experienced in the hazardous waste area, and they were used to supervise their colleagues for one or two site projects. The "trainees" were put on their own with minimal supervision for their third projects, although the firm maintained review and quality control procedures in-house. Today, about 2½ years later and largely as a result of this program, they have 300 experienced people, of whom about 75 are at the senior or journeyman levels. The experience at NUS was similar, with a core group that had experience working with the new people. Bernie Bigham of the State of Maryland's Waste Management Division noted that his State had the first Superfund site in the United States, the Chemical Metals Industries plant in Baltimore. Virtually everyone in the office went to it and daily meetings were held so that all could learn.[53]

Another aspect of the problem, Mr. Wallace said, referring primarily to engineers, is that the Superfund work represented a major career move for many of those involved. Designing solutions for hazardous waste sites required looking at problems in a different way than designing wastewater treatment plants or fish hatcheries, to use his example. Part of the job also required a certain amount of negotiating with government officials. To be sure, not everyone who embarked on this program found it to his liking, and some did return to their previous work.

The point that most of these people eventually came to was that the critical ingredient is time. It takes time to find and hire certain professionals, such as hydrologists and other geotechnical people, in part because there are fewer of them to begin with. It also takes time to retrain them, both in a technical sense and with regard to the requirements of the Superfund program, as well as in such things as the use of appropriate safety measures and equipment for those working at the sites. These are not insurmountable hurdles, but overcoming them incurs certain costs, such as the costs of increased recruitment efforts. With regard to training, it is not clear that this is very different from other situations where employees have a high initial learning curve. From the comments of those mentioned above, it appears that this period of learning is on the order of six months to a year, arguably not an inordinate amount of time for a program that many say will take 20 years or more to accomplish its goals.

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[51] Telephone conversations with Paul Goldstein, Vice President, NUS Corporation, March 1, 1985; Dr. Craig J. Boreiko, Chemical Industry Institute of Toxicology, March 1, 1985; and William Wallace, Director of Solid and Hazardous Waste Management, CH2M Hill, February 12, 1985.

[52] Telephone conversation with Dr. Craig J. Boreiko.

[53] Telephone conversations with William Wallace, Paul Goldstein, and Bernie Bigham, Maryland Office of Environmental Programs, Waste Management Division, February 28, 1985. Chemical Metals Industries appeared on the Interim Priorities List released by EPA on October 23, 1981, but was cleaned up before the first National Priorities List was proposed in December 1982.

Occupational groups of interest

The broad occupational groups we are primarily concerned with are civil and chemical engineers, chemists, and geologists. Some of the more specialized fields are hydrologists, hydrogeologists, and toxicologists. For none of them is there a specialty specifically relating to hazardous waste. There are three recent projection studies that are of use for the larger job categories, but none of them addresses the specialties of interest.

The National Science Foundation report is entitled, "Projected Response of the Science, Engineering, and Technical Labor Market to Defense and Non-defense Needs: 1982-87." [54] The study considered four scenarios, combining high and low economic growth projections with high and low defense expenditure estimates. In all cases the occupations of interest to this paper show ample surpluses of personnel. The tightest scenario, high economic growth/high defense expenditure, shows a surplus of 20.7 percent of chemists, 27.5 percent of geologists, 31.0 percent of chemical engineers, and 13.2 percent of civil engineers for 1987.[55]

"Occupational Projections and Training Data," published by the Bureau of Labor Statistics (BLS),[56] projects the need for certain occupations in 1995, but does not say very much about supply. An excerpt from one of the report's tables appears on the following page. While at first glance the projected increases for the engineering categories in particular might seem rather high (between 41 and 47 percent for chemical engineers, and between 45 and 52 percent for civil engineers), it should be remembered that the time period covered is 13 years. Speaking of engineers in general, the report states:

TABLE 5.—CIVILIAN EMPLOYMENT IN OCCUPATIONS WITH 5,000 WORKERS OR MORE, ACTUAL 1982 AND PROJECTED 1995

Occupation	Total employment [in thousands]				Percent change		
	1982	1995			1982–1995		
		Low trend	Moderate trend	High trend	Low trend	Moderate trend	High trend
Chemical engineers	56.0	78.9	80.3	82.3	40.9	43.5	47.0
Civil engineers	155.4	225.5	228.1	235.8	45.1	46.8	51.7
Chemists	88.8	107.0	108.3	110.9	20.5	22.0	24.9
Geologists	48.6	60.1	60.1	58.8	23.6	23.6	20.9

Source: U.S. Department of Labor. Bureau of Labor Statistics. Occupational Projections and Training Data: 1984 Edition. A Statistical and Research Supplement to the 1984–85 Occupational Outlook Handbook. Bulletin 2206. Washington, U.S. Govt. Print. Off., 1984. Table B-1, p. 80.

About half of all entrants are recent engineering graduates. Most of the remainder transfer from other occupations—generally persons with previous training or experience in engineering or a closely related occupation. Other entrants are recent science and mathematics graduates, immigrant engineers, and persons over 55 who have not worked the previous year.[57]

Chemists, on the other hand, are more closely related to their academic training, and the majority of entrants are recent college graduates. The same is true of geologists, though to a lesser degree: "Many persons with appropriate training and experience transfer from related occupations." [58]

The other BLS publication, "Employment Projections for 1995," [59] makes some observations of interest about certain industries, although the comments are rather broad. For example:

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[54] Special report, NSF 84-304. [Washington, 1984] 54 p.

[55] Ibid., table B-12, p. 43.

[56] A Statistical and Research Supplement to the 1984-85 Occupational Outlook Handbook. Bulletin 2206. Washington, U.S. Govt. Print. Off., 1984. 116 p.

[57] Ibid., p. 17

[58] Ibid., p. 21

[59] Bulletin 2197. Washington, U.S. Govt. Print. Off., 1984. 184 d.

Engineering occupations are expected to provide nearly 600,000 new jobs by 1995, as the occupation is expected to grow much faster than average. . . . More civil engineers will be needed to meet the demands of a rejuvenated construction industry. . . .

Chemists will be affected by a diminished growth of the chemical industry and geologists and geophysicists by a slowdown in oil and gas extraction. Therefore, both occupations are expected to grow only as fast as average.[60]

The implication of these three reports, according to one expert in manpower statistics, is that right now it appears there will be an adequate supply of personnel in the occupations of concern—provided there are no dramatic changes that cannot presently be foreseen. However, the studies are unable to say anything about such relatively narrow fields as hydrology and toxicology.[61]

Toxicologists.—According to officers of the Society of Toxicology (SOT) there does not appear to be a shortage of toxicologists at present, nor has there been over the last 3-5 years. There are many young PhDs who are looking for work, as well as post-doctoral fellows working at universities in research programs who are available. Another resource that is presently underutilized is toxicological consultants, who either operate privately or who are available from academia.[62] One indication of the balance of this labor market is the number of registrants with SOT's placement bureau. In the spring of 1984 there were 54 positions listed, and 165 job applicants registered.[63] The preliminary figures for 1985 are 50 job openings and 250 applicants.[64] Most of the people to whom the 1984 figures refer were working in some capacity, although 34 percent of the non-students were post-doctoral fellows who, it appears, were ready and able to enter the marketplace in the very near future. Only 9 percent were unemployed.[65]

The above comments do not apply to senior people in the field. Both Dr. Parent, the director of SOT's placement service, and Dr. Boreiko of the Chemical Industry Institute of Toxicology said that there appeared to be no shortage of positions for these top people.

One reason for what appears to be a fairly ample supply of trained individuals, according to Dr. Phitzer, is that there was a large effort about 10 years ago to train toxicologists in anticipation of demand created by the passage of the Toxic Substances Control Act (TSCA). But TSCA was never implemented as fully as expected and the result was a surplus. Consequently many people could not find work and went into other areas. How large this pool might be is unknown. A final comment on the outlook for the supply of toxicologists was made by Dr. Boreiko. The Reagan Administration's proposed FY 1986 budget for the National Institutes of Health would mean a cutback of some 1,500 grants over the next couple of years. If Congress adopts the proposal there could be many people relocating soon, he said.

Hydrologists.—The outlook for hydrologists[66] is not clear, and conflicting opinions were heard from State officials, association officers, and private firms. Part of the difficulty is that one cannot get an undergraduate degree in hydrology in this country, although a student can major in hydrology at 25-30 schools, with the degree being awarded in such areas as geology, engineering, and water resources; and there are only a handful of graduate schools that offer further training. This lack of availability of academic credentials, according to some observers, lets anyone call himself a hydrologist, and makes misleading what statistics are available. The American Institute of Hydrology was established in an attempt to bring some order to this situation by certifying qualified individuals in the field, according to its president, Dr. J.C. Csallany. He estimated that there might be 20,000 hydrologists in this country, of whom perhaps a third would pass the institute's certification exam; and the other two-thirds might be qualified at the technician level.

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[60] Ibid., p. 44.

[61] Telephone conversation with Betty Vetter, American Association for the Advancement of Science, February 15, 1985.

[62] Telephone conversations with Dr. Emil Phitzer, Vice President, Society of Toxicology, February 27, 1985; and Dr. Richard A. Parent, Director, Society of Toxicology Placement Service, February 28, 1985. Dr. Phitzer also serves as a site visitor for grant applications to the National Institutes of Health, in which capacity he frequently visits universities.

[63] Society of Toxicology. Placement Service. 1984 Annual Report, p. 2.

[64] Telephone conversation with Cindy Tholt, office manager, Society of Toxicology, February 27, 1985.

[65] Society of Toxicology. Placement Service. 1984 Annual Report, p. 3.

[66] According to Dr. J.S. Csallany, President of the American Institute of Hydrology, hydrology is concerned with water on the surface, in soils and underlying rock, and in the atmosphere, and hydrologists can come from any of several academic backgrounds. Hydrogeology is concerned with subsurface water, and its practitioners usually have a geology background. Telephone conversation, February 26, 1985. "Hydrology" is used here to cover both disciplines. The comments on training and on the profession in this paragraph are from Dr. Csallany.

One who was skeptical about the supply of hydrologists was Stan Felipe of California's Toxic Substance Control Division. The State is currently starting up its own mini-Superfund program to deal with sites that did not score high enough to be placed on the Federal National Priority List. Out of 16 companies that qualified (based on their expertise and the State's requirements) to bid on the cleanup contracts, "at least half" identified the same drilling firm as their subcontractor for that portion of the work. Based on this and other information, Mr. Felipe is anticipating some delays in his program. He also commented that new companies were coming into the field, although he seemed to have some reservations about their qualifications.[67]

William Wallace of CH2M Hill was another who said that hydrologists were difficult to find. In his experience, job applicants were likely to have backgrounds in such things as the extraction of water from deep levels. While this is useful, many of the hazardous waste problems are closer to the earth's surface and raise different issues. As a result, the company found it necessary to provide them with additional training. The head of the American Geophysical Union, Dr. Fred Spilhaus, echoed some of these thoughts, but, after expressing his concerns about the availability of competent hydrologists, went on to note that people in the geoscience disciplines are able to change their areas of specialization fairly easily because the whole field is heavily mathematically inclined.[68]

Others were more optimistic. The manager of Illinois's Division of Land Pollution Control said that, while he was not always able to hire the people he needed, he could obtain the expertise by borrowing people from other State agencies or by using professors from State universities in a consultant capacity.[69] The executive director of the American Academy of Environmental Engineers said there was "no question" that there were enough qualified hydrologists, and even mentioned two firms in this profession that could easily handle more work.[70]

Dr. Keith Turner's report for OTA noted that the fields of geology and hydrology are somewhat overlapping. He further observed:

> Many geologists are closely involved in the study of subsurface fluids because of the economic interest not only in water supplies but also petroleum and natural gas resources. Accordingly, if the demand for these specialities is emphasized, technically qualified personnel could be induced to transfer their career paths from other specialty disciplines within geology.[71]

He also looked at the membership of several geological societies. While the following figures (Table 6) are not addable since individuals frequently belong to more than one association, they do provide an indication of the size of the geologist/hydrologist population. Dr. Turner also commented on the "almost explosive growth in the number of professionals in the geologic fields," [72] particularly in those related to petroleum. Membership of the American Association of Petroleum Geologists grew by almost 9,000 members between 1981 and 1983. He went on to say:

> Such rapid growth in the potential workforce has occurred during a softening in the employment market in the petroleum exploration fields. Hard data on the number of unemployed geologists is not readily available, but such data suggest there is an abundance of professionals who, with some retraining, could be usefully employed to fill the geologist and hydrogeologist manpower skills in hazardous waste cleanup actions.[73]

TABLE 6.—*Membership of Geological Societies*

Name of Organization:	*Total USA Membership*
National Water Well Assocation	2,932
Association of Engineering Geologists	2,237
Geological Society of America	
Engineering Geology Division	884

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[67] Telephone conversation with Stan Felipe, March 4, 1985.

[68] Telephone conversation with Dr. Fred Spilhaus, February 26, 1985.

[69] Telephone conversation with Robert G. Kuykendall, Manager, Division of Land Pollution Control, Illinois Environmental Protection Agency, February 21, 1985.

[70] Telephone conversation with William Anderson, February 26, 1985.

[71] Dr. A. Keith Turner. Potential for Future Shortages of Technical Personnel for National Clean-up of Uncontrolled Hazardous Waste Sites. p. 77.

[72] Ibid. p. 84.

[73] Ibid. p. 84.

Hydrogeology Division	818
American Association of Petroleum Geologists	34,598

Source: Dr. A. Keith Turner. Potential for Future Shortages of Technical Personnel for National Cleanup of Uncontrolled Hazardous Waste Sites. p. 83.

Nevertheless, in his analysis and conclusions, Dr. Turner foresees the possibility of shortages in this area,[74] although in conversation he said that he did not think the shortfall would be catastrophic, and that it could be adjusted with a certain amount of retraining.[75]

Chemists.—The National Science Foundation and Bureau of Labor Statistics reports reviewed earlier did not project any shortage of chemists, and according to Terry Nally of the American Chemical Society, the ACS's satisticians do not foresee any shortfall either. Each year, 10,000–12,000 bachelor's degrees in chemistry are awarded; the number has remained constant for at least the last decade, and there is no sign of it changing. Of the graduating class each year about 12 percent are unemployed and looking for work as chemists. About 20 percent are unemployed and not looking for work, either because they are pursuing advanced degrees or because their career interests have changed. These figures have also been stable for a number of years.[76]

Chemical and Civil Engineers.—Again, the NSF and BLS reports indicated no shortage in these fields. Don Weinert, the executive director of the National Society of Professional Engineers, noted that at present the supply of both is plentiful due to the slowdown in the oil industry.[77]

CONCLUSION

Cleaning up hazardous waste sites is a new activity presenting new problems about which there is inadequate information. While the number of people with specific educational and professional qualifications in hazardous waste is not large, there appear to be ample scientific and engineering personnel in the disciplines required—with one possible exception—to carry out the program. The exception is hydrology/hydrogeology, where information and opinions are mixed. While a certain amount of on-the-job training is frequently necessary, it seems that it can be accomplished fairly rapidly. There also appears to be a good bit of flexibility in the labor market, with pools of resources not initially evident being potentially available, as in the case of toxicologists.

5. CAPACITY FOR TREATMENT, STORAGE, AND DISPOSAL OF SUPERFUND WASTE

A fourth aspect of the debate over Superfund's spending pace is whether there will be sufficient capacity to manage the wastes that must be treated or removed from Superfund sites. In its "301 report" to Congress, EPA said,

> There is a concern about the extent to which fully permitted treatment, storage and disposal facilities will be available to dispose of Superfund wastes from remedial or removal actions. . . . EPA is considering a requirement for use of lined land disposal units for Superfund waste and establishing a preference for use of treatment over land disposal. . . . In addition, while there are many new and existing facilities scheduled for review to receive a final permit, many of these facilities are likely to be unable to receive final RCRA permits until the facilities take additional action to meet regulatory requirements. Because of these problems, it is possible that there may be inadequate treatment and disposal capacity under RCRA to meet Superfund needs.[78]

This chapter examines the availability of treatment, storage, and disposal capacity, as well as the factors underlying EPA's concerns.

Available data

The most comprehensive and most recent data on hazardous waste management capacity are found in the "National Survey of Hazardous Waste Generators and Treatment, Storage, and Disposal Facilities Regulated Under RCRA in 1981." This survey was released in April 1984. It was prepared by Westat, Inc., under contract to U.S. EPA.

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[74] Ibid. p. 134–142.

[75] Telephone conversation with Dr. A. Keith Turner, Department of Geology, Colorado School of Mines, March 27, 1985.

[76] Telephone conversation with Terry Nally, February 12, 1985.

[77] Telephone conversation with Don Weinert, February 26, 1985.

[78] U.S. EPA, 301(a)(1)(C) study, p. 3–10.

The survey concludes that "ample hazardous waste management capacity appears to be available for 1981 levels of hazardous waste generation. Only 23 percent of treatment, 36 percent of disposal, and, at most, 64 percent of storage capacity was utilized across the U.S." [79]

Most of this unused capacity is located on the site of waste generators and is not available for treatment, storage, or disposal of Superfund wastes. Nevertheless, capacity utilization at commercial facilities, which would be available for Superfund waste, was also quite low: 35% for treatment, 39% for storage, and 33% for disposal.

The Westat survey showed ample capacity in virtually every Region of the country (see Figure 1). The only exception was disposal capacity in Region X (Washington, Oregon, Idaho, and Alaska); according to the survey, however, the Region X estimate "was based on only two reporting facilities, and is very approximate." [80]

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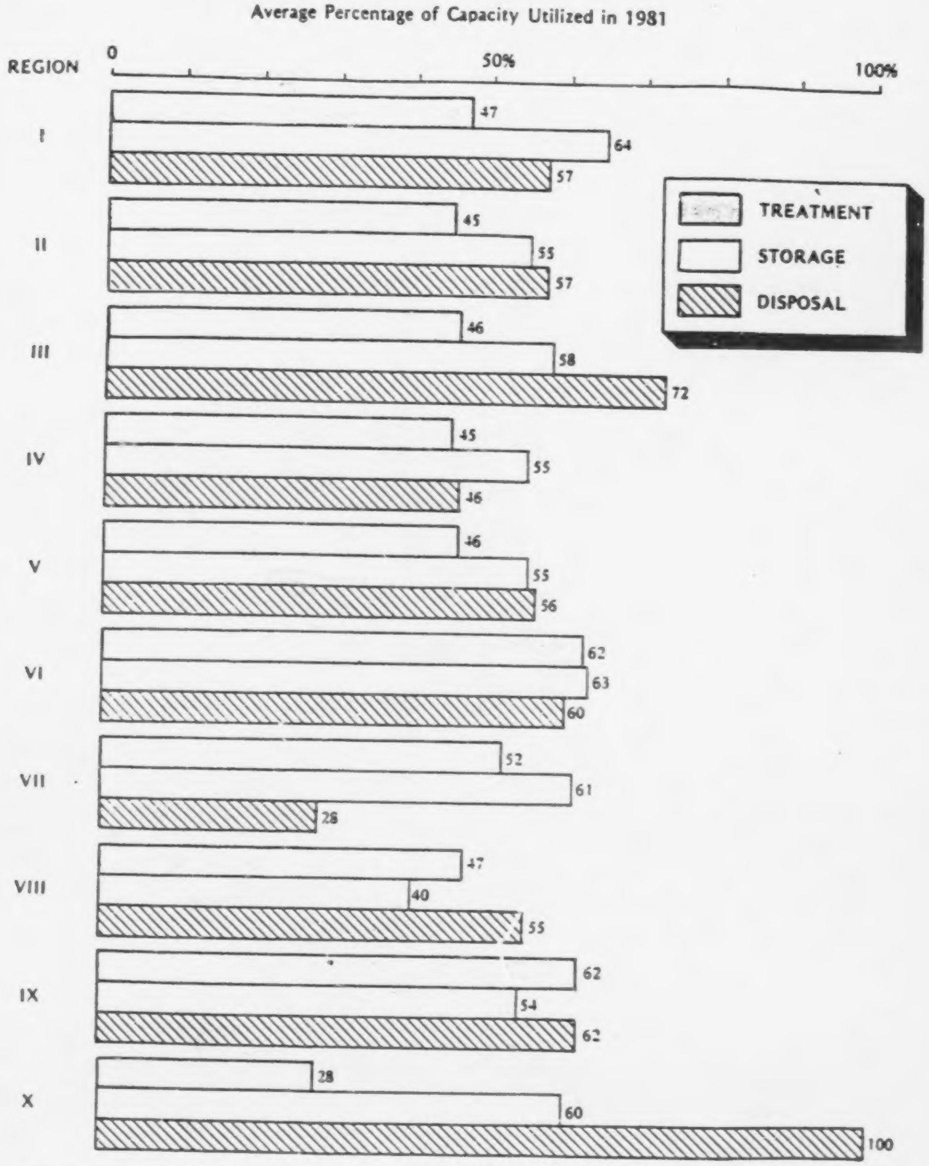
[79] Westat survey, p. 213.

[80] Ibid., p. 218.

FIGURE 1

1981 AVERAGE FACILITY TSD CAPACITY UTILIZATION RATES, BY REGION



Source: U.S. EPA, National Survey of Hazardous Waste Generators, and Treatment, Storage and Disposal Facilities Regulated Under RCRA in 1981, Figure 35

Factors affecting future capacity

While adequate capacity was available in 1981, several more recent developments are acting to reduce capacity for Superfund and other hazardous waste. The first factor is the on-going RCRA permitting process, which has led to the closure of a substantial number of facilities since 1981 and promises to effect more closures as facilities respond to the deadlines for submission of Part B permit applications. As of January 1985, 3,502 permit applications for hazardous waste management facilities have been called in by EPA and authorized State programs. Of these call-ins, 1,516 facilities have submitted applications, but 1,003 other facilities have closed.[81] EPA believes that it is generally the smaller facilities that have closed; [82] but nevertheless, more than one-fourth of the facilities EPA has attempted to permit have closed since the 1981 Westat survey.

The 1984 RCRA amendments may accelerate this closure process. The amendments require: that all Part B permit applications for land disposal facilities be submitted by November 1985; that, before being permitted, all landfills and surface impoundments have double liners and leachate collection systems; and that many wastes be banned from land disposal beginning in November, 1986.

These requirements will substantially increase demand for incineration and treatment facilities and for the subset of land disposal facilities that can meet the new RCRA requirements. In questioning the availability of waste management capacity for Superfund waste, the Agency notes that it is not clear how much capacity will be available when the new RCRA requirements take effect.

Data concerning future capacity

Unfortunately, the Agency does not appear to have any data that would provide clear answers to this question of future capacity. We spoke with five offices at EPA without finding any hard data.[83] Specifically, we asked three questions: (1) how many sites meet the standards of the Agency's recently announced Superfund "off-site policy"; [84] (2) what is the volume of Superfund waste to be disposed at commercial waste management facilities; and (3) how does this volume compare to the volume of hazardous waste generated by industry and managed at commercial waste management facilities under the RCRA program?

The latter question is the key consideration in determining whether the Superfund program's expansion need be curtailed by lack of waste management capacity. If the volume is relatively small, even a large percentage increase would not significantly affect overall demand for capacity. While the Agency is unable to answer this question, it does have fragmentary data that CRS used to develop very preliminary estimates.

At 11 Superfund sites for which EPA data were available, waste volume averaged approximately 3,000 tons per site.[85] An EPA program manager familiar with these sites believes that the waste volumes are "reasonably typical" of Superfund waste volumes.[86] Assuming this to be the case, CRS next obtained EPA data on the number of sites at which removals and remedial actions are projected in FY 1986–1990 (Table 7). This number reaches a high of 282 in FY 1987, before declining to 264 annually in FY 1989 and later years.

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[81] U.S. EPA, Office of Solid Waste and Emergency Response, "Summary Report on RCRA Activities—February, 1985," pp. 5–7.

[82] Telephone Conversation with Terrance Grogan, Permits Branch, U.S. EPA Office of Solid Waste.

[83] Offices contacted were the Director's Office, Office of Emergency and Remedial Response (OERR); Deputy Director's Office, Waste Management and Economics Division, Office of Solid Waste (OSW); Office of Policy and Program Management, OERR; Economic Analysis Branch, Waste Management and Economics Division, OSW; Waste Treatment Branch, OSW.

[84] The off-site policy, which is still in draft form, is an attempt to avoid moving waste from a current Superfund site to one that will become a Superfund site. The policy requires that waste treatment alternatives be considered even where the cost of such action exceeds that of land disposal. In addition, Superfund wastes to be disposed at landfills may only be taken to facilities that are lined, have leachate collection systems, and have been inspected and found to have no significant RCRA violations within the previous six months.

[85] U.S. EPA, Office of Solid Waste Management and Economics Division, "Superfund Waste Disposal Evaluation," June 29, 1984. The waste volume estimate was derived from data on pp. 7 and 23 of the report.

[86] Telephone conversation with Don White, U.S. EPA Office of Solid Waste, Waste Management and Economics Division, March 27, 1985. While saying he thought the data were reasonably typical, Mr. White cautioned against use of the data to generalize about the Superfund program, because of site variability and other factors. Nevertheless, other sources indicated that 3,000 tons per site may be a high estimate (telephone conversation with Bruce Clemens, U.S. EPA, March 28, 1985; Mr. Clemens has overseen approximately 35 case studies of Superfund responses for OERR).

TABLE 7.—PROJECTED REMOVALS AND REMEDIAL ACTIONS UNDER SUPERFUND 1985–1995

Year	Removals	Remedial actions	Total removals and remedial actions
1985	204	25	229
1986	190	56	246
1987	190	92	282
1988	190	81	271
1989	190	74	264
1990	190	74	264
1991	190	74	264
1992	190	74	264
1993	190	74	264
1994	190	74	264
1995	190	74	264

Source: U.S. EPA, Superfund Budget Forecasting Model. Data refer to number of activities started in each year.

If an average of 3,000 tons of waste must be treated or disposed for each site, the peak demand for waste treatment and disposal by the Superfund program would be 846,000 tons in FY 1987. This amount would represent approximately three-tenths of one percent of the estimated 264,000,000 metric tons of hazardous waste generated annually in the United States, or 9 percent of the 9.4 million tons of hazardous waste managed by commercial waste management facilities.[87]

It is worth stressing that this estimate is based on a small number of sites that may or may not be similar to future removal and remedial actions. However, to the extent that we have incorrectly estimated Superfund's demands on future waste management capacity, we believe that we are more likely to have overstated demand than to have understated it.

This is so for two reasons. First, of the eleven sites EPA studied, five (45 percent) were remedial actions and the rest removals. Remedial actions are the more expensive, longer term component of the program, and would tend to involve larger volumes of waste. In EPA's projected activity levels for FY 1986–1990, remedial actions account for only 23–33 percent of the number of responses. Thus, the sample is slightly skewed toward what would tend to be higher volume sites.

Second, we have assumed that all sites will generate waste for off-site disposal, yet many sites will not do so. Both EPA and several contractors note that large volume wastes are unlikely to be moved off site,[88] because of the extraordinary costs and the risks involved in transporting the waste. Rather, high volume wastes are likely to be treated or contained on site, posing no demand on commercial waste management facilities.

Thus, whether an increase in the Superfund program's size would strain waste management capacity would depend on the methods chosen to manage the waste. If the waste is shipped to off-site commercial facilities, a doubling or tripling of the number of remedial actions might increase the demand for commercial services by 5 to 10 percent at the same time that new RCRA requirements were constraining available capacity. If Superfund waste is managed on-site, however, which appears likely in many cases, an increase in program size would not necessarily be constrained by the availability of commercial waste management facilities.

Other considerations

A final consideration, which may warrant further attention, is whether EPA's capacity concerns are focused on the proper methods of waste management. The real problem, according to some observers, is that EPA is not using appropriate technologies for managing Superfund wastes. This point is one of the central conclusions of the Office of Technology Assessment report on Superfund, a summary of which was recently released.[89] It was echoed, in a telephone interview with Richard Fortuna, Executive Director of the Hazardous Waste Treatment Council. Mr. Fortuna states that a large number of firms (he listed 13 firms individually during the telephone interview) have the ability to produce mobile incineration and treatment units for use at Superfund sites, but that the Agency has been slow to encourage the use of these technologies. Without mobile waste treatment capability, the Agency will be competing with commercial facilities that may be in short supply given the new RCRA requirements. But Mr. Fortuna believes that a better approach would be for EPA to treat these wastes on site, using mobile equipment.

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[87] Westat survey, pp. 2, 149.

[88] Telephone conversations with: Michael Jury, CH2M Hill, March 29, 1985; Claudia Furman, JRB Associates, March 26, 1985; and Bruce Clemens, U.S. EPA, March 28, 1985. CH2M Hill is one of three EPA contractors for remedial investigations and feasibility studies at Superfund sites. JRB Associates is EPA's contractor for case studies of Superfund removals and renedial actions.

In response to some of these points, Don White of EPA/OSW notes that the Agency evaluated 11 Superfund sites to determine whether the wastes put back on land could have been further treated or incinerated before being disposed. The evaluation concluded that:

Full treatment or pretreatment technologies, such as incineration, neutralization, solidification, and carbon adsorption, were often used at the Superfund sites or at the disposal facilities. Of the Superfund actions studied, perhaps as much as 60% of the wastes were incinerated, treated or recycled. Of the approximately 40% of the wastes that were landfilled, about 7% were neutralized and/or solidified prior to landfilled.[90]

The Agency concluded that while some wastes that were landfilled without prior treatment could have been solidified, the cost would have been 2.6 times the cost of landfilling alone. If the wastes had been incinerated, the cost would have been 8.8 times the cost of landfilling.

CONCLUSION

In summary, it is difficult to determine the accuracy of EPA's claim that availability of adequate waste treatment and disposal capacity will prevent the Superfund program from spending more than $1-1.2 billion per year. A review of the available information, however, leads to several other conclusions: 1) Agency personnel do not appear to know how much waste will be generated by Superfund sites for off-site treatment of disposal; 2) the only hard data available from the Agency indicate substantial amounts of unused waste treatment, storage, and disposal capacity; 3) commercial hazardous waste management capacity is likely to become more constrained as the RCRA amendments take effect; and 4) the degree to which increases in the Superfund program's size will strain waste management capacity depends on the methods chosen to manage the waste, which EPA determines on a site-by-site basis.

Mr. **Downey** [presiding]. I thank the gentleman for his outstanding work, not only recently, but in the past, as the father of Superfund. This committee and this country owes the gentleman a deep debt of gratitude for the work that he has done.

I want to deal specifically with the several areas that the gentleman just mentioned on the restructuring of EPA. To me, this is an essential matter if we continue to listen to the notion that they cannot spend the money. Not even the Roman Empire lasted 1,500 years. It is unlikely that the next 1,500 will see us clean up these sites. So, clearly, EPA has to be restructured.

What specifically does the committee have in mind with respect to the restructuring of EPA so that it can use this money that we are going to provide effectively?

Mr. **Florio**. I think probably the single most significant thing we can do is to incorporate into the law mandatory standardized standards for cleanup. To the degree that we all want to induce the private sector to become more involved in voluntary cleanup, we are not going to be able to do that as long as we have relatively subjective standards out there such that the private sector tells me and tells everyone else they talk to. They would be foolish to come in and to clean up to what they think is the standard that one agency of EPA would tell them is adequate, only to find out that another change in administration, another region comes in and says, "Well, that's not good enough."

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[89] U.S. Congress, Office of Technology Assessment, *Superfund Strategy*, Summary, March 1985. The full report is forthcoming at this writing.

[90] U.S. EPA, "Superfund Waste Disposal Evaluation", *op. cit.*, p. 7.

So that in the interest of public health and public safety, to ensure that we do not spend all these billions of dollars to have someone say that this is certified because it meets this standard, but then to have someone else come in and say, "Well, that is not adequate"—we have advocated, incorporated into the law, the bill, last year, and will incorporate again into the bill this year standards that are objective that we can all verify—that would be the single most important thing I think we can do to induce more private sector cleanup and cleanup that is certain and is secure.

Mr. Downey. Well, of course, our friends of the marketplace, of which we are all travelers, believe that if additional resources are provided in a thoughtful way, I would assume that the marketplace will respond to expend these resources if the EPA has the people to monitor them, so that the private people who are out there, according to the studies that you have done, will be able to help us in this capacity.

Is that a fair assumption?

Mr. Florio. That is a fair statement, and quite frankly, I think when you talk with the EPA people, they are not as comfortable with their position that we do not have sufficient engineering capacity, we do not have sufficient laboratory capacity, as perhaps they once were, on the basis of the information that we have provided for the record.

Mr. Downey. May I ask you, Mr. Gregg and Mr. Moore raised some important questions, and my colleague from Texas, Mr. Archer, has as well. The notion that there is little connection between the feedstock tax and the problem out there in the country where the sites have to be cleaned up—how do you respond to the fact that there is not the nexus that they would like to see between the feedstocks and the polluters?

Mr. Florio. Let me try to respond to it this way. First, it is important that we understand what Superfund was about. It is true that Superfund is designed to deal with primarily orphan sites—that is, sites for which there is no immediate identifiable person or firm. But that does not mean that we do not know who it is that caused the problem. Superfund is primarily to be a bill that provides for the authority and the funding for immediate cleanup. We would not need Superfund if we really just wanted to go out and sue somebody that may have been there or may have been gone.

What this is designed to do is to provide for the authority to go and clean up. In many of these instances, we know who it is that caused the problem. It just takes a while to ultimately get compensation back. And quite frankly, the discussions about white hat and black hats, there are no white versus black; it is mostly gray. If we go and look at the responsible parties, the defendants in many of the actions that have been taken, they are the feedstock producers as they are nonfeedstock producers.

The decision was made 5 years ago by this committee as well as by the Congress that feedstocks were a very legitimate basis to assess these fees on, because they were the building blocks of all of the wastes that are toxic, that are in these sites, and that feedstocks were produced by people, in large measure, who found their wastes into the sites as well.

Mr. **Downey**. Let me ask about a problem that concerns me deeply, and that is leaky underground storage tanks. Will your Committee, in the process of marking up a bill, deal with this problem and provide a mechanism for the clean-up of leaky storage tanks?

Mr. **Florio**. There are a number of alternatives that are being floated around. The answer is I suspect yes, we will.

As to how we do it, whether it be as a part of the Superfund, a percentage, and the gentleman has taken the lead on this matter, whether it will be a percentage of the funded system, however it is funded, or whether it be an independent assessment on tank owners, that is yet to be determined.

But I suspect the answer is yes, we will deal with that problem.

Mr. **Downey**. Thank you.

Mr. Archer.

Mr. **Archer**. Thank you, Mr. Chairman.

We welcome you to our committee, Congressman Florio, and appreciate your testimony. I would like to explore just a minute with you, if I could, what Mr. Downey asked you about relative to the connection between the current producers of feedstocks and the problem that exists out there.

As I understand it—and I mentioned this earlier—the law does provide that any producer of toxic chemicals must be responsible for cleaning up their waste, and it has been traditionally in this country our position that those who create problems for others in society should bear the responsibility for solving those problems to the greatest degree possible—and I approve of that.

If I start a new chemical corporation today, to produce feedstocks, or to utilize feedstocks, and I have not owned any plant in the past, my understanding is you propose that I should be taxed for the injuries that have been done in the past, in spite of the fact that I have a completely effective waste cleanup process today and am not injuring anybody.

Is that correct?

Mr. **Florio**. The decision was made 4 years ago that it was an appropriate, rational connection that the chemical industry—now you are positing if you come online today, are you part of the chemical industry—the point was made 4 years ago that the chemical industry was an appropriate source for the funding of the cleanup of these chemical waste problems.

The fund was kept relatively small 5 years ago because of our anticipated hope, which was found to be ill-founded, that the fund would be replenished—every dollar that went out would come back when we found who it is who caused the problem.

Incidentally, those who cause the problem are in many respects the same people who are paying the feedstocks, as well as others. But I do not think it is an irrational position to say that the chemicals that we are finding, the wastes that we are finding, that all come from the feedstocks that are assessed should be a part of the basic fund at the beginning, with the expectation that those who have caused the problem would replenish the fund.

Mr. ARCHER. But these feedstocks today, we by admission have said, did not cause the problem, and whatever problem they might cause is being taken care of for the future. That is not what Superfund is all about.

I would also say to you that you speak as if the chemical industry is a continuous monolith of the same ownership over the years, for 50 or 100 years, and therefore, whoever was involved in it, because the chemical industry was involved in it 50 years ago in the creation of these waste sites, that today it is easy to put a tax on the same industry that created much of the waste.

But the facts are that the ownership of the chemical industry is primarily the working people of this country, the pension funds, that shifts when another person retires. The ownership is totally different today than it was 50 years ago, and yet you want to penalize the people who are innocent today, have no relationship, any more than a manufacturer of bicycle tires or of any other item may have had to the creation of the waste 50 years ago. The difficulty that I see is that when you heap it on this one industry that is blameless today, you are hanging a lot of innocent people, and it may literally be a mass hanging.

The major problem in our trade decline is because of the strength of the dollar. Nobody can argue with that. The fact is that the strength of the dollar is there, and we have to compete under that environment. And you add another major tax on top of people who are blameless today and put them out of business and deny all the jobs they create, and the foreign currency that they recapture, or the dollars that they recapture in the world marketplace, and I think you have got a Pyrrhic victory.

The American people as a whole have a problem with waste sites and the hazard that they create for us. The American people who will benefit across the board, unless there is a party of blame, should pay the cost.

Mr. FLORIO. Mr. Archer, let me just try and respond to it very briefly by saying we are here, talking about the equities. To the degree that you say that, in fact, there are aspects of the chemical industry that are free from blame, if we are going to acknowledge the fact that we have a real problem here—and I think almost everyone acknowledges that we have a real problem—that it is going to cost an amount of money, this committee and the Congress made the decision 5 years ago that it is an appropriate place to seek some of this money, particularly contrasting the equities. If you go and talk to an individual—we are going to advocate general revenues—an individual who did absolutely nothing to cause the problem is going to be assessed a portion.

So that, I do not have any difficulties——

Mr. ARCHER. But these people you are taxing did not cause the problem, either, because if they did, you could prove that, and you could get the money from them. You keep saying that, but that is not the fact.

Mr. FLORIO. I would just respond that what we are talking about is this committee making the representation that it was not an inappropriate industrywide role to foot the bill for a portion of this, and I regard that as being a reasonable and legitimate position to continue.

Mr. ARCHER. Thank you very much.

Mr. DOWNEY. Mr. Coyne.

Mr. COYNE. No questions.

Mr. DOWNEY. Mr. Pease.

Mr. PEASE. No questions.

Mr. DOWNEY. Mr. Moore.

Mr. MOORE. No questions.

Mr. DOWNEY. Mr. Dorgan.

Mr. DORGAN. No questions.

Mr. DOWNEY. Mrs. Kennelly.

Mrs. KENNELLY. No questions.

Mr. DOWNEY. Mr. Flippo.

[No reponse.]

Mr. DOWNEY. Mr. Schulze.

[No response.]

Mr. DOWNEY. Mr. Gregg.

Mr. GREGG. Thank you, Mr. Chairman.

In trying to develop this case, it seems to me that we ought to evolve a set of standards to which to test the tax to see if it accomplishes the goals we want. The first, obviously, is going to be the amount of money we want to raise. There is not a significant amount of discrepancy about that.

The second, it appears to me, is that everyone seems to agree that the tax should be structured so as to offset for the encouragement of imports, either through Mr. Moore's suggestion of an ad valorem tax on imports that use chemical products, or some sort of action such as that.

The second standard, it seems to me, that we should consider looking at in setting this tax is to tie the tax to the toxicity of the pollutants that are now being produced.

And a third standard would be possibly reducing the tax in order to encourage treatment of pollutants.

A fourth element might be that we not overly penalize one industry and thus make the tax broad based; and a fifth element might be that it would not be overly complex.

Would you agree that those might be standards that we should be looking at here?

Mr. FLORIO. The only difficulty I would have is with the question of trying to develop a gradation of toxicity and somehow assess a tax with regard to degrees of toxicity. I do not think that can be done, and I know that that was a policy decision that the Congress made 4 years ago, and this committee made in rejecting that effort. What we said was that we cannot do that administratively, it would be a nightmare, and therefore we decided that it was not to be done that way.

The balance of your points certainly are all conceptually things that I feel comfortable with. I want to emphasize on the import—I have done a modification of my own views. I did not think that we could get to the point of evaluating feedstock derivatives in a meaningful enough way so as to have a system that could be collectable in an easily administered way. I now think that that is the case, and I think it should be done. It should be a factor in the deliberations.

Mr. GREGG. Well, of course, the point that Mr. Moore made, and which I agree with, is that we are going a step beyond just evaluating the feedstock derivative. We are talking about the fully completed product that comes into the country that has clearly a number of items which, if they had been produced domestically, would have been subject to the tax—such as an automobile, which has synthetic rubber and plastic.

Mr. FLORIO. Let me just caution you about concerns about GATT, that if you carry this to its logical extreme there is probably nothing that comes into the country without some feedstock component. I think there is a midpoint the chemical industry would probably be willing to acknowledge as their concern, that is, feedstocks as well as a fairly well-defined derivative list. If you start getting into toothpaste that is imported because it has something in it, or automobiles, you are opening a Pandora's box that has trade ramifications and is almost making it unworkable to try to reasonably assess—and I do not think that is the chemical companies' problems.

Mr. GREGG. Moving on to a second topic, which is the broad-based concept, if you are just weighting it toward feedstocks, or even for that matter, if you take the administration's waste-end proposal, which basically negatively impacts treatment facilities, and the wet waste concept being one which really does not relate to how much toxicity there is in the waste, but just relates to how much water you are putting out, wouldn't it be more logical to try to pick a vehicle that would be more broadbased in the chemical industry, such as chemicals generally?

Mr. FLORIO. The answer is that there are proposals out there for the whole manufacturing sector. There are proposals that are there, gross receipts tax-type approaches that talk about all the business entities beyond a certain level of profitability, service as well as manufacturing. So that they are all on the plate, and the committee will have its work cut out for it in terms of evaluating the impact.

I would commend for your close scrutiny the proposal of Senator Mitchell and Senator Chafee which I think, of all the ones that I have seen that were a broad-based tax, which I hope would be a component rather than to be relied upon exclusively, that one appears to be the one that I think is the most workable and the most equitable.

Mr. GREGG. So you are not hung up on having us do it on feedstocks or waste-end?

Mr. FLORIO. Not exclusively, no. I want a fund, but I want a certain fund. I would just caution you, as I did in my remarks, about this idea that we should build into the certain fund anticipated awards from litigation. The administration puts that into their fund, and I just think that is a very dangerous thing to do if any large proportion of the anticipated fund is to be based upon those types of speculative numbers.

Mr. GREGG. Thank you.

Mr. DOWNEY. Mr. Dorgan.

Mr. **Dorgan**. Mr. Florio, I just wanted to say thank you for your testimony and to say that with the number of subjects that every Member of Congress is confronted with daily and weekly and monthly, it is very difficult for us to focus on something. And you clearly have focused on this problem and provided some substantial leadership to the Congress, and I am appreciative of that.

In response to a couple of questions you were asked earlier I just wanted to say, and then get your reaction, that we do not have the luxury of doing nothing at this point. We have a national problem that we must respond to. In responding to this national problem, we cannot do it without resources. The response requires revenue. Revenue does not just come from nowhere. It comes from somewhere. It requires the development of a revenue base to respond to the problem. And it is difficult to develop the right kind of revenue base that everyone will agree to. But all of us, I think, understand that we have to begin to solve a critical national problem, and the tough choices of finding revenue sources are choices we must make and must make now.

Mr. **Florio**. If I could just make a point, sophisticated people in industry acknowledge everything you have said. No one likes to pay. But the people representing the chemical industry are willing to pay what they regard as a fair share. But we have got to make these programmatic changes to make sure that the program operates in a better way than it has in the past. We will do that.

But I think to address this problem requires at least the money that we passed last year, and then I leave it to your wisdom to make a determination as to how that is to be allocated.

Mr. **Dorgan**. Thank you for your testimony.

Mr. **Downey**. Mr. Schulze.

Mr. **Schulze**. Thank you, Mr. Chairman.

I would like to thank our colleague for his presentation. In followup on your last statement, Jim, if we decide to extend the Superfund Program—"we" being Congress—without substantive changes other than the amount of funding, you just said "I'll leave it up to you," but can you be a little more specific? Tell me what level of funding, or what amount of funding you think would be proper?

Mr. **Florio**. Well, $10.1 billion, which is the amount that we passed last year, is the absolute minimum, I think, necessary to maintain the current managerial improvements. And there have been good improvements in the last 2 years as opposed to the previous 2 years. I think that we can do some things that are necessary—for example, one of the things that we include in the bill of last year was assistance to the States. It is folly to think that we are going to continue relying upon the States to come up with their proportional share when they are not doing it.

The administration's bill halves the amount of money in the total package and then doubles the responsibilities of the States. That is a prescription for getting absolutely nothing done. We have got to have this money to provide the assistance to the States, as well as the ability to deal with health effects studies and other very important components.

Mr. **Schulze**. Of course, the number of sites drives the amount. How many sites do you think we should figure on each year for the next——

Mr. **Florio**. We have in our proposal of last year, that I am hopeful we will include again, 150 starts per year being required. We have scheduling——

Mr. **Schulze**. That is the proper level.

Mr. **Florio**. We think that is responsible, and we think that that can be funded under the proposal we are talking about.

Mr. **Schulze**. Can you give us a feel, Jim, for when your subcommittee might be reporting a bill out?

Mr. **Florio**. Yes. I am hopeful that within the next few weeks, we will be in a position. I am introducing a bill next week that I hope will be the markup vehicle and we are hopeful we can deal with it at subcommittee level within a few weeks.

Mr. **Schulze**. I thank the gentleman.

Mr. **Downey**. Mr. Daub—and after Mr. Daub, we will recess for a vote and come back with Mr. Thomas.

Mr. **Daub**. Thank you, Mr. Chairman.

I will be very quick about my questions, and of course, we had a good time together last year on the floor with respect to your bill. You are able, and we appreciate your sharing your expertise and commitment with our committee.

What will be the cost in your $10.1 billion—since I assume that will be the level of funding you seek in your bill when you introduce it—how do you apportion that with respect to victims' compensation?

Mr. **Florio**. The bill, if you will recall, that passed last year did not have a victims' compensation proposal in it.

Mr. **Daub**. Will your bill have it in it?

Mr. **Florio**. I am still making some determinations.

Mr. **Daub**. How about the issue of—if we are going to have that size of fund—andI tend to think it should be somewhat smaller, although we are not all that far apart, I think, the way we are headed this year. What is the joint and several liability, the apportionment of liability—I see some tradeoff in terms of size of fund, broad-based tax, and the liability issue.

Mr. **Florio**. I do not. And I intend to introduce and work for a strict, joint and several liability provision. I think you will hear from EPA that they think it is absolutely essential to have that in the law, and that is what is enabling them to induce voluntary cleanup. I feel very strongly about that being maintained as it is in the existing law, as well as the bill that passed last year, and I think EPA will say the same thing.

Mr. **Daub**. Do you the intend to disregard the nature of the insurance industry, with respect to how they will view voluntary encouragement to clean up?

Mr. **Florio**. We have been listening to and are sensitive to some of the problems that the insurance industry is talking about. I am not sure that their problems would be addressed by in any way changing strict joint and several liability. There are other things that perhaps can be done to alleviate some of the concerns, but we should not retreat from the concept of strict joint and several for recapturing money back to the fund, the way the law currently stands.

Mr. DAUB. I certainly respect your point of view. We could not disagree more, and that will be one of the battles.

Mr. DOWNEY. The committee stands in recess until 11:25.

[Short recess.]

Mr. DOWNEY [presiding]. If everyone will please take their seats. The Chair misspoke when we recessed. I said that we would hear from Mr. Thomas, and I apologize to him.

We will hear from our colleagues, Mrs. Schneider and Representative Wyden. I apologize.

My seniority instincts tell me to recognize Mr. Wyden first, but my common sense says that I recognize you first, Claudine. We will be happy to hear from you.

Mrs. SCHNEIDER. I am afraid with the seniority, we happen to be classmates—but I will take ladies before gentlemen, at this point, and thank you.

Mr. DOWNEY. Well, that is all right. Seniority, as I understand it, when you are classmates, is by State's admission to the Union, and even though Rhode Island was the reluctant 13th, we will be happy to receive you first.

STATEMENT OF HON. CLAUDINE SCHNEIDER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF RHODE ISLAND

Mrs. SCHNEIDER. Well, I thank you, Mr. Chairman, for enabling us to testify here today.

Needless to say, this committee faces the overwhelming task of raising billions of dollars to finance the cleanup of abandoned hazardous waste sites. As you know, Superfund started out as a $300 million a year program, and I think since that time, we have all been very shocked by the growing expenses of the cleanup problem.

Now the current estimates are that the cleanup costs could range anywhere from $20 billion to a mind-boggling $100 billion.

So, these enormous expenses are a direct consequence of our reliance on land disposal. We have learned the hard way that land disposal is inherently unsafe. And I think that the data that is coming in points up a very interesting paradox—that we pay millions of tax dollars to move Superfund wastes from abandoned sites to supposedly safe landfills. Then we discover that the new sites are leaking the same waste into someone else's ground water. The question is: How much more tax money will we have to raise to clean up these new sites?

Well, unfortunately, our reliance on land disposal continues, even with strong Federal regulations. The CBO predicts that 160 million tons of hazardous waste will be disposed of in the land in 1990.

What we propose here today is that the committee consider a modest waste-end tax that attacks the source of these enormous expenditures.

Our particular waste-end tax creates an economic incentive to move away from land disposal and toward treatment or recycling technologies, and by doing so, we can take responsible steps in reducing the cost of future cleanup.

Now, can the waste-end tax bring about the desired changes in management behavior? Well, to answer that question I would like to briefly describe to the committee the results of a recently completed study conducted by the Congressional Budget Office. This study has yet to be released in its entirety, but it is my understanding that Dr. Rudy Penner will share the full results of the study with the committee at a later date. I hope you will get a chance to review this work, because it is one of the most ambitious and far-reaching examinations of the waste-end tax that has been conducted to date.

What CBO did was to use a computer model to predict the change in behavior that would occur under both the new RCRA regulations and a waste-end tax. According to CBO, a waste-end tax similar to that proposed by Congressman Wyden and myself could substantially reduce the amount of waste that is being disposed of in the land. Specifically, CBO said that during the next 5 years, a relatively modest waste-end tax could lead to a 19-million-ton reduction in the amount of waste that goes into the landfills; a 29-million-ton reduction in the amount of waste that goes into underground injection wells, and a 44-million-ton reduction in the amount of waste that is put into surface impoundments.

CBO found that shifts of this magnitude would not occur under the regulations alone. A landmark 301 study on Superfund conducted by EPA reached similar conclusions. According to that study, a meager $5 a ton waste-end tax would cause a 25-percent reduction in the amount of waste that is disposed of in underground injection wells.

So, given the tremendous cost of cleanup effort that we are currently facing, I think it makes sense for us to make every effort to reduce our reliance on land disposal. I would like to share with you the CBO's conclusion, and I quote:

> By taxing undesirable waste and disposal technology combinations, waste-end fees immediately change the waste management cost structure facing industry. Previously higher costs, but safer technologies, become cost-effective relative to tax disposal methods, facilitating a shift in waste management practice. These induced shifts can support the regulatory changes envisioned under the 1984 RCRA amendments.

Second, I would like to touch on the experience of individual States that have essentially been experimenting with the waste-end tax.

Right now, 20 States have successful waste-end taxes in operation. Last fall, EPA surveyed eight of these States with a waste-end tax and found that revenue reliability ranged from a low of 71 percent in Connecticut to a high of 107 percent in New Hampshire. By comparison, the Federal feedstock tax has realized 78 to 84 percent of revenue projections during its 5-year lifespan.

Currently, waste-end taxes have proved themselves on a State level. Last year, when we appeared before this committee, many members expressed interest in our proposal, but chose to delay a final decision on the waste-end tax until there would be further study conducted. Well, during the past 6 months, three separate major studies by EPA, by the Office of Technology Assessment, and most recently by the Congressional Budget Office, that concluded that Congress should adopt a waste-end tax. In addition, the concept is supported by a broad coalition including Chemical Manufacturers' Association, the Environmental Policy Institute, the Center for the Study of the American Business, the National Association of Solvent Recyclers, and the National Center for Legislative Research. These analysts all agree that the waste-end tax makes a very valuable contribution to our national waste management policy, and at the same time, providing a supplemental stream of revenue for the Superfund Program.

In conclusion, I think it is pretty clear that the waste-end tax is a good idea whose time has come. And I certainly hope that this committee will choose to include such a tax in the Superfund financing package.

Thank you.

[The prepared statement follows:]

STATEMENT OF HON. CLAUDINE SCHNEIDER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF RHODE ISLAND

Mr. Chairman and members of the committee, thank you for the opportunity to testify again on the merits of a waste-end tax.

Your committee faces the difficult task of raising billions of dollars to finance the cleanup of abandoned hazardous waste sites. As you know, Superfund started as a $300 million a year program. I think that all of us have been shocked by the growing expense of the cleanup problem. Analysts now predict that total cleanup costs could range from $20 billion to a mind-boggling $100 billion dollars.

These enormous expenses are a direct consequence of our reliance on land disposal. We have learned the hard way that land disposal is inherently unsafe. The data coming in points to an ironic paradox. We pay millions of tax dollars to move Superfund wastes from abandoned sites to supposedly safe landfills. Then we discover that the new sites are leaking the same waste into someone else's groundwater. How much more tax money will we have to raise to cleanup these new sites?

Unfortunately, our reliance on land disposal continues. Even with strong federal regulations, the Congressional Budget Office predicts that 160 million tons of hazardous waste will be disposed in the land in 1990.[1]

What we propose today that the Committee consider a modest waste-end tax that attacks the source of these enormous expenditures. Our waste-end tax creates an economic incentive to move away from land disposal and towards treatment or recycling technologies. By doing so we can take a responsible step in reducing the cost of future cleanups.

INCENTIVE EFFECTS OF A WASTE-END TAX

Can the waste-end tax bring about desired changes in management behavior? To answer that question, I would like to briefly describe to the Committee the results of a recently completed study conducted by the Congressional Budget Office (CBO). This study has yet to be released in its entirety. It is my understanding that Dr. Rudoph Penner will share the full results of this study with the Committee at a later date. I hope you will get a chance to review this work. It is one of the most ambitious and far-reaching examinations of a waste-end tax conducted to date.

CBO used a computer model to predict the change in behavior that would occur under both the new RCRA regulations and a waste-end tax. According to CBO, a waste-end tax, similar to that proposed by Rep. Wyden and myself, could substantially reduce the amount of waste that is being land disposed. Specifically, CBO found that, during the next five years, a relatively modest waste-end tax could lead to a 19 million ton reduction in the amount of waste that goes into landfills, a 29 ton million ton reduction of the amount of waste that goes into underground injection wells, and a 44 million ton reduction in the amount of waste that is put into surface impoundments.[2] CBO found that shifts of this magnitude would not occur under regulations alone.

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[1] See appendix 1. This figure includes stabilized waste placed in landfills.

[2] See appendix 1. The waste-end used in this study applied a $25 per ton tax on most forms of land disposal, a $5 per ton tax on land treatment, and a $5 per ton tax on UIC wells.

The landmark 301 study on Superfund conducted by EPA reached similar conclusions. According to that study, a relatively meager $5 a ton waste-end tax would cause a twenty-five percent reduction in the amount of waste that is disposed of in underground injection wells.

Given the tremendous cost of the cleanup effort we face, it makes sense for us to make every effort to reduce our reliance on land disposal. As the CBO report concludes:

"By taxing undesirable waste and disposal technology combinations, waste-end fees immediately change the waste management cost structure facing industry. Previously higher cost but safer technologies become cost-effective, relative to taxed disposal methods, facilitating a shift in waste management practice. These induced shifts can support the regulatory changes envisioned under the 1984 RCRA amendments."

STATE EXPERIENCES WITH THE WASTE-END TAX

I would also like to briefly touch upon the experience of individual states with a waste-end tax. Today, twenty states have successful waste-end taxes in operation.[3] Last fall, EPA surveyed eight states with a waste-end tax and found that revenue reliability ranged from a low of 71 percent in Connecticut to a high of 107 percent in New Hampshire.[4] By comparison, the federal feedstock tax has realized 78 to 84 percent of revenue projections during its five year lifespan. Clearly, waste-end taxes have proved themselves on a state level.

Last year, when we appeared before this Committee, many Members expressed sympathy for our proposal but chose to delay a final decision on the waste-end tax until further study had been completed. During the past six months, three separate major studies—by EPA, by the Office of Technology Assessment, and, most recently, by the Congressional Budget Office—have concluded that Congress should adopt a waste-end tax. In addition, the concept is supported by a broad coalition including the Chemical Manufacturers Association, the Environmental Policy Institute, the Center for the Study of the American Business, the National Association of Solvent Recyclers, and the National Center for Legislative Research.

These analysts all agree that a waste-end tax can make a valuable contribution to our national waste management policy while providing a supplemental stream of revenue for the Superfund program.

In short, the waste-end tax is a good idea whose time has come. I hope that the Committee will choose to include such a tax in the Superfund financing package.

TABLE 22.—WASTE MANAGEMENT SHIFTS UNDER FEE SYSTEMS 1 AND 2

[In millions of metric tons]

Technology	1983 quantity managed [1]	New Law		1986		1990	
		1990 without waste reduction [2]	1990 with waste reduction [3]	Fee system 1 [4]	Fee system 2 [4]	Fee system 1 [4]	Fee system 2 [4]
Injection well	66.8	50.7	41.4	62.7	61.2	39.0	33.4
Landfill:							
No pretreatment	34.2	22.2	22.2	25.6	20.5	22.2	17.6
With stabilization	([5])	70.7	65.9	2.6	1.8	27.2	40.5
Surface impoundment	49.5	11.2	10.7	25.6	46.6	10.7	10.7
Incineration	2.7	11.6	8.2	2.7	2.7	8.2	8.2
With stabilization of residue	([5])	([5])	([5])	([5])	([5])	([5])	([5])
Sanitary landfill	26.7	11.3	10.7	25.6	27.3	10.7	10.7
Oxidation	3.0	7.6	5.2	3.7	3.9	6.3	7.4
Land treatment	2.9	5.7	4.8	3.6	4.1	1.0	12.6
Industrial boilers	9.5	12.1	9.0	10.1	11.8	11.6	9.5
Distillation	[6] 10.9	[6] 11.0	[6] 9.5	[6] 11.9	[6] 11.9	[6] 11.9	[6] 11.9
Ion exchange	0.5	0.9	0.5	3.0	3.3	12.4	13.4
Solvent extraction	([5])	0.9	0.9	([5])	([5])	([5])	([5])
Electrodialysis	([5])	([5])	([5])	1.9	1.9	9.2	9.2

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[3] See appendix 2 for description of each state's waste-end.

[4] See appendix 3.

TABLE 22.—WASTE MANAGEMENT SHIFTS UNDER FEE SYSTEMS 1 AND 2—Continued

[In millions of metric tons]

Technology	1983 quantity managed [1]	New Law		1986		1990	
		1990 without waste reduction [2]	1990 with waste reduction [3]	Fee system 1 [4]	Fee system 2 [4]	Fee system 1 [4]	Fee system 2 [4]
Oil rerefining	1.8	2.8	2.4	1.8	1.8	3.0	1.7
Metal recovery	([5])	1.2	0.5	1.1	1.1	5.4	5.4
Long-term storage	([5])	([5])	([5])	0.9	5	1.7	0.8
Sewers and other	58.9	60.9	36.7	66.9	49.8	48.1	35.6
Total	265.6	280.4	228.6	249.7	249.7	228.6	228.6

[1] RCRA regulations prior to 1984 amendments.

[2] Projection based on no waste reduction case in Table 13.

[3] Projection based on waste reduction case in Table 13.

[4] Tax rates detailed in Table 20. Industrial response to the new cost structure created by the tax rate is assumed to be no more than 20 percent a year.

[5] Less than 0.5 million metric tons.

[6] Reflects recycling of lower grade solvents.

Source: Congressional Budget Office.

TABLE 25.—STATE WASTE-END FEE SYSTEMS IN 1984

State	Treated wastes taxed	Higher rate for off-site management	Who pays	Highest possible tax rate (in dollars per ton)
Alabama	Yes	Yes	Generator and facility operator	10.00
California	Yes		Generator and facility operator	45.66
Colorado	Yes		Facility operator	2.00
Connecticut	Yes	Yes	Generator	10.00
Illinois	Yes	Yes	Facility operator	6.60
Indiana			Facility operator	1.50
Iowa	Yes	Yes	Facility operator	50.00
Kansas	Yes	Yes	Generator and facility operator	5.00
Kentucky	Yes	Yes	Generator	11.00
Louisiana	Yes	Yes	Facility operator	10.00
Maine	Yes	Yes	Facility operator	33.00
Minnesota	Yes		Generator	70.40
Mississippi		Yes	Facility operator	9.00
Missouri	Yes		Generator and facility operator	26.00
New Hampshire	Yes	Yes	Generator	36.60
New York	Yes	Yes	Generator	12.00
Ohio		Yes	Facility operator	8.99
South Carolina			Facility operator	7.00
Tennessee		Yes	Generator	7.00
Wisconsin			Facility operator	0.135

Source: Office of Technology Assessment, "Statement of Joel H. Hirschhorn for the Hearing Record," Committee on Environment and Public Works, U.S. Senate (September 10, 1984).

EXHIBIT 5-17.—REVENUES PROJECTED AND COLLECTED FROM WASTE-END TAXES IN STATES IN MOST RECENT FISCAL YEARS

[Thousands of dollars]

State	Most recent State fiscal year projection [1]	Actual income	Income as a percent of projection	Next State fiscal year projection
California	$6,114	$5,468	89	$6,513
Connecticut	1,000	712	71	None
Illinois	400	330	83	1,600

EXHIBIT 5-17.—REVENUES PROJECTED AND COLLECTED FROM WASTE-END TAXES IN STATES IN MOST RECENT FISCAL YEARS—Continued

[Thousands of dollars]

State	Most recent State fiscal year projection [1]	Actual income	Income as a percent of projection	Next State fiscal year projection
Ohio	1,227	1,205	98	1,400
Minnesota	900	921	[2] 102	900
New Hampshire	232	247	107	230
New York	3,500	3,546	101	4,000
South Carolina	750	720	[3] 96	None

[1] Survey conducted in summer 1984.

[2] Minnesota's actual income figure is based on six months or two quarters of collections put on an annual basis.

[3] South Carolina's figure reflects five months of collection, also put on an annual basis.

Source: U.S. Environmental Protection Agency, Office of Policy, Planning and Evaluation, draft report, Survey of States's Experiences with Waste-End Taxes, August 1984.

Mr. DOWNEY. Mr. Wyden.

STATEMENT OF HON. RON WYDEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OREGON

Mr. WYDEN. Thank you very much, Mr. Chairman.

I think my colleague has said it very well, and I just want to make a few additional points, Mr. Chairman.

First of all, it seems to me that we have to start with the basic premise that there is no such thing as a safe landfill in this country. The horrifying proof of that statement is that landfills that are now receiving Superfund waste are in fact becoming Superfund sites themselves. And it seems to me a good portion of what we are doing in this country is literally playing a toxic waste shell game, where we just move waste from one site to another—some call it the toxic waste merry-go-round—call it what you will, but it clearly is not addressing the problem of reducing hazardous waste in this country.

Our legislation gives us a chance to raise about 285 million Superfund dollars a year over the next 5 years, while at the same time coming up with a financial incentive not to produce waste in the first place. And we think that is a sensible idea.

Let me add just a couple of specific points, Mr. Chairman. First of all, the tax would be paid by the owners and operators of hazardous waste disposal facilities. The actual taxable event is the receipt of the hazardous waste at such a facility. The idea is that the cost will be passed back to the hazardous waste producers. We tax the hazardous waste disposal facilities for just one reason—there are fewer of them than there are hazardous waste producers. Therefore, it would be easier and cost less for the Treasury Department to collect the tax.

The second point we would like to address, Mr. Chairman, is what happens if a facility treats the waste so that it no longer is hazardous. That is exactly the kind of behavior our bill tries to encourage, and we do so by providing a full tax credit to a facility operator who renders the waste nonhazardous within one year.

The third point I would make, Mr. Chairman, is that our bill inflates tax rates so that there would be an incentive to reduce dumping hazardous waste on or in the land. An EPA study found a direct correlation between tax rates and the amount of toxic waste disposal. EPA found that a waste-end tax would have a significant effect in shifting waste to treatment. Specifically, the EPA study estimated that at the $5 per ton rate contained in our bill, about one-quarter of all waste now injected in deep wells could be rendered nonhazardous through treatment.

The fourth point that I want to make, Mr. Chairman, deals with the question of illegal disposal of waste—some call it midnight dumping—the question of, in effect, trying to skirt our laws. It seems to us the basic point here, Mr. Chairman, is that we take away none of the enforcement tools in today's law. And I would not in any way support that.

What we do is we add yet another important tool. So that, if under our legislation, someone is engaging in this illegal activity, they would in fact be violating two statutes—one, of course, the environmental law, and then the tax statute as well.

The last point I want to make, Mr. Chairman, deals with this question of dry weight/wet weight. We have chosen wet weight specifically, and there are four reasons why.

First, with respect to waste reduction, the greatest value a waste-end tax has is in reducing the high volume of liquid wastes that are land—disposed. Liquid wastes are mobile, more difficult to contain, and move into ground water more easily than solid waste. A relatively low wet weight tax, for example, the $5 per ton with respect to the injection wells, can reduce the sheer volume of liquid waste disposed in landfills according to EPA's study. That incentive effect is simply lost by switching to dry weight.

With respect to fairness, the dry weight tax imposes high testing costs that small businesses would never be able to afford. These small businesses would be stuck with higher dry weight taxes, while bigger companies with their own lab facilities could exclude water from their tax base.

With respect to administratability, EPA has found that a dry weight tax would be more expensive and complex to administer and would take longer to implement.

Fourth, with respect to revenue reliability, there is simply no basis for predicting revenues on a dry weight basis. Nobody knows how much is out there.

So the bottom line, Mr. Chairman and members, is that neither EPA nor Treasury appears to support the dry weight tax. That is why we go with a modest wet weight tax.

And the last point I make, Mr. Chairman, again, we very much have appreciated the opportunity to work with the committee, and look forward to coming up with something practical and reliable in the days ahead.

Thank you, Mr. Chairman.

[The prepared statement follows:]

STATEMENT OF HON. RON WYDEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OREGON

Mr. Chairman, I'd like to begin by expressing my thanks for your allowing me and my colleague, Mrs. Schneider, to come before you today to discuss our proposal to tax hazardous wastes that are dumped on or in the land.

The task of coming up with enough money for the Superfund to do the job Congress intended it to do will be one of the stiffest challenges facing this committee and the entire Congress this year. But we have an idea we think can help.

For the past three years we have pushed the idea of a taxing hazardous wastes that are dumped on or in the land. In passing the Resource Conservation and Recovery Act, the Congress effectively said, "Dumping hazardous wastes on or in the land is not safe." The fundamental principle behind the Schneider-Wyden waste-end tax is exactly the same. In short, there's no such thing as a safe landfill.

The horrifying proof of that statement is that landfills receiving Superfund waste are now becoming Superfund sites themselves. We're playing a toxic waste shell game, and we've got to put a stop to it.

The Schneider-Wyden waste-end tax bill, working in conjunction with RCRA regulations, will help us do just that. It will help reduce this country's dependence on dumping hazardous wastes on the land, and at the same time will help us raise about $285 million Superfund dollars a year over the next five years. An "environmental two-fer," if you will.

Now, many of my colleagues have said the idea sounds good, but they then ask how it will actually work. Let me take just a moment to explain some of the basics of the Schneider-Wyden waste-end tax.

First, who pays the tax? The tax is paid by the owners and operators of hazardous waste disposal facilities. The actual taxable event is the receipt of the hazardous waste at such a facility. The idea is that these costs will be passed back to the hazardous waste producers.

We tax the hazardous waste disposal facilities for one simple reason. There are fewer of them than there are hazardous waste producers. Therefore, it will be easier and cost less for the Treasury Department to collect the tax.

Second, what if a facility treats the waste so that it no longer is hazardous? That is exactly the kind of behavior our bill tries to encourage so we provide a full tax credit to a facility operator who renders the waste non-hazardous within one year.

Third, will your bill's tax rates provide an incentive to reduce dumping hazardous wastes on or in the land? Yes. An EPA study found that a waste-end tax would have a significant effect in shifting waste to treatment. Specifically, the EPA study estimated that at the $5 per ton rate contained in our bill, about a quarter of all wastes now injected in deep wells could be rendered non-hazardous through treatment.

Fourth, won't your bill encourage hazardous waste producers to illegally dispose of their waste? The EPA report I just mentioned also studied State experiences with a waste-end tax and found no correlation between states with a waste-end tax and so-called "midnight dumping." We feel the stiff penalties for illegal hazardous waste dumping included in RCRA, combined with increased enforcement efforts by all levels of government will appropriately address this problem.

Fifth, how sure are your revenue estimates? We have worked long and hard with environmental groups, with the Chemical Manufacturers and other affected business groups, with EPA and with the Treasury Department in an effort to figure out just what all is out there and what kind of behavior our bill would induce. We have a much better handle on this information than we did when we appeared before this committee last year and we have adjusted our bill accordingly.

In addition, we tax the entire volume of hazardous wastes injected into the ground, rather than taxing on a "dry weight" basis, where the amount of water mixed with the hazardous waste is subtracted out. We fully agree with our friends in the environmental community and others who make the point that hazardous wastes injected into the ground must be taxed on a "wet weight" basis to help ensure enough revenue is raised to make the tax worthwhile in the first place.

Finally, we provide a further safety net by requiring the waste-end tax rates to be adjusted upward for any year in which the waste-end tax revenues fall short of projections.

In conclusion, Mr. Chairman, let me say that the waste-end tax is an idea whose time has come—and 59 of our colleagues from both sides of the aisle who have cosponsored our bill agree. A lot has changed since we last appeared before this committee to push this idea. We have an EPA study that has found an incentive-based waste-end tax can and will work. The Treasury Department has acknowledged a waste-end tax is administratively feasible. Additional studies have been done on how much hazardous waste is being produced and how it is being handled. A steady stream of new government and private sector studies tell us the hazardous waste clean-up effort we face is monumental and that we're going to need a lot of money to get the job done.

One thing that has not changed is my commitment—and that of Representative Schneider—to working with the members of this committee to include in this year's Superfund bill a practical and reliable waste-end tax.

Thank you, again, Mr. Chairman, for the opportunity to come before this distinguished committee. I would be happy to answer any questions committee members might have.

Mr. Downey. First of all, I want to express my thanks to you for the work that you have done in educating this committee and the Congress about the effectiveness of a waste-end tax. We were skeptical last year. We are a lot less skeptical this year. I think you have proven that if you have a good position and you stick with it long enough, people will come around to your way of thinking. I want to thank you for appearing before the committee.

Mr. Duncan.

Mr. Duncan. Thank you, Mr. Chairman.

I also thank my colleague, but I just have one question.

Do you feel that your bill would encourage environmentally sound waste management practices more than the kind of approach in the administration's bill?

Mr. Wyden. Well, Mr. Duncan, the administration is moving very much along the same lines. In fact, I think it is fair to say that virtually all the bills now contain waste-end taxes; it is just a question of the mechanics. As I said, there has been a great deal of debate among people about a wet weight or dry weight, but I think we are all moving in the same direction.

The fact is that we know that financial incentives, plus some degree of regulation can work better than just the regulatory approach that we are using today, and I think that is why we want to go to it.

Mr. Duncan. Do you have significant differences between your bill and the administration's bill?

Mrs. Schneider. Insofar as our bill and the administration's bill is concerned, I think some of the revenue projections are different, and beyond that, we are in agreement that treatment should not be subject to tax, which I think is a very important distinction, which leads to your original question, Mr. Duncan, that we can provide incentives, with the use of technology and with the tax, to do away with continuing hazardous waste sites.

[Mrs. Schneider subsequently provided a clarification of her above answers.]

The administration's bill would, in fact, tax major forms of treating hazardous waste, in particular waste-water treatment and incineration. We believe that legitimate forms of treatment should be exempt from Taxation, so as to maintain the economic incentives to move towards treatment and recycling and away from land disposal.

Mr. Duncan. Thank you.

Thank you, Mr. Chairman.

Mr. Downey. Do other members of the committee have questions?

Mr. Dorgan.

Mr. Dorgan. Thank you, Mr. Chairman.

First of all, I appreciate your testimony today, Representatives Schneider and Wyden.

The Joint Committee on Taxation has done an evaluation of waste-end taxes, and has indicated in one survey that some State governments, which had opted for a waste-end tax, had initially raised less revenue and also experienced higher administrative costs.

How do you respond to that funding, and would that be a problem if we were to adopt a waste-end tax?

Mrs. SCHNEIDER. Well, I certainly believe that that would not be a problem, if and when we adopt a waste-end tax. I think the administrative feasibility of our waste-end tax is very clear, through the example of the States.

We did an informal telephone survey of some of the numerous 20 States that still have a waste-end tax, and I would like to share with you a few specifics.

Illinois, for example, reported that they experienced no real problems with respect to the waste-end tax, and that it has not been terribly complex to administer.

It is interesting, the State of New York, which has its share of hazardous waste sites, experienced some initial difficulties, but that, they admit, was due to poor planning, and any administrative problems appear to have levelled out right now. The State employs for all of New York two people in the Department of Environmental Conservation and three in its tax department in order to collect the tax.

The State of Minnesota is very pleased with its waste-end tax, and they rely on two IBM computers for its collection.

In Ohio, they have one employee to collect the tax.

So we are going to continue this telephone survey and formalize a little bit, and I would be very happy to share with the members the information that we receive when it is included.

Obviously, a waste-end tax will impose some costs, and there will be expenses for enforcement, but I do not want to leave the committee members with an exaggerated notion of the problems that the States have had with their waste-end taxes, because obviously, if this were an idea that were not working, we would not see 20 States right now enthusiastically embracing this concept and this practice.

Mr. DORGAN. So, when people raise a question about administrative feasibility of your proposal, you are saying that the experiences of State governments demonstrate the feasibility; is that correct?

Mrs. SCHNEIDER. Precisely. The other thing that I might add when we are talking about the administration of the waste-end tax, our bill provides two simple tax rates. One is for surface impoundments and landfills, and the other one is for deep wells.

Second, the bill taxes waste at the licensed disposal facilities, to which all the different RCRA wastes are taken. Now, that adds up to be only 240 facilities that handle 95 percent of the waste. So administratively, because of this concentrated group of taxpayers, it would be rather simple to enforce.

I would like to refer members of the committee to EPA's 301 study, which found that a waste-end tax is administratively feasible, and also to the Treasury's own support of the waste-end tax. And I would add that neither of these positions are reflected in the Joint Tax Committee's report, and I think it is important that you look at these other sources.

Mr. **Dorgan**. Just one final question. When Representative Florio testified earlier, there was just brief discussion about the various proposals that have been made to finance the Superfund cleanup and what trade impact they might have on domestic industries. And we just touched on that briefly.

Can you give me your evaluation of what kind of trade impact we might be talking about?

Mr. **Wyden**. Yes, Congressman. We are all sensitive regarding the trade issue, and of course, it is important to the committee. Two points. First, the industry most concerned about the trade impact of Superfund, of course, and Superfund taxes, is the chemical manufacturers. They would also play a major portion of paying any waste-end tax, yet I think—and I think you will hear this later today—not only do they not oppose the waste-end tax, but they specifically endorse it.

The next point that I make is Treasury has been most concerned about the effect of Superfund taxes on trade, yet the bill that they have been talking about proposes a waste-end tax that is twice the size of ours. Again, I think the EPA 301 study is important, and they found there as well that a modest waste-end tax would not have a major impact on the cost of production for the chemical and nonchemical industries.

Mr. **Dorgan**. Well, thank you very much, and let me echo Mr. Downey's sentiments. Last year, we touched on this. I know the gentleman from Oregon was especially helpful on the waste-end tax, and both of you, I think, have done an awfully good job in giving us some good direction on this, and we appreciate it.

Mr. **Wyden**. I thank the gentleman.

Mr. **Downey**. Mr. McGrath.

Mr. **McGrath**. No questions.

Mr. **Downey**. Mr. Schulze.

Mr. **Schulze**. No questions.

Mr. **Downey**. Mr. Gregg.

Mr. **Gregg**. I think your proposal has a lot of merit relating to waste-end taxing but there are a couple of issues that I am concerned with.

By taxing at the disposal site versus the production site, aren't you inherently, especially for the small producer, creating an incentive to dispose of it in the "midnight dumping" manner? I mean, the fact is, the fellow is going to know that if he ships it to the disposal site there is going to be a tax which is going to be put into his fee, and these taxes are going to be fairly substantial now, they are not going to be marginal, because the State taxes are really not substantial compared to what we are talking about here. So you have really created an incentive to dispose of this illegally.

Mr. **Wyden**. I think the answer I would give you, Mr. Gregg, and I tried to touch on it in my testimony, is we are adding yet one more enforcement tool. If we were taking away an enforcement tool to deal with the midnight dumper, I think that would be dangerous and something that I would not support.

We are keeping all the current enforcement tools yet adding one more. I do not think it is possible—at least, I do not know of any, and I have spent a substantial amount of time looking at this—to come up with an absolutely foolproof way, proof positive, to protect against the midnight dumper.

I do think that what we are doing takes a responsible step by way of an enforcement process. We know, for example, that for those who are engaged in midnight dumping through organized crime activities, one of the best ways to catch them is through the Tax Code, particularly when complemented by RCRA enforcement statutes.

So I think we are going certainly a leg up on where we have been. It is not the perfect system that you and I would like, but it is substantially better than what we have got, and I think a plus overall.

Mrs. SCHNEIDER. The only thing that I would add to that is if you have a small producer, maybe making 100 kilograms of hazardous waste, there is not enough of a tax to induce that producer, I believe, to avoid the environmental laws and risk the consequences.

Mr. GREGG. Another question that comes to mind is, as you put this on a wet weight bases, aren't you really just going to end up not raising as much revenue as you think you are going to raise, because the large producers, who may be the larger players in the game, are simply going to up their concentrates and reduce the amount of wet weight they are going to emit. As a practical matter, might your tax projections may be significantly overstated because the incentive of the marketplace will be to significantly increase concentrations.

Mr. WYDEN. I just do not see how that would be in their financial interest. I mean, that is saying that we are going to make all the economic decisions in the manufacturing process on the basis of a wet weight/dry weight kind of judgment. And I just do not think that that would be in their commercial interest, and I think it would certainly be going to a lot of expense and a lot of inconvenience.

As I said, I outlined the four reasons from the standpoint of incentives for waste reduction, fairness, even administration and generating revenue, and I think that is why our position is essentially being backed by EPA and Treasury. And at this point, there are not very many substantial arguments on those four counts for going with dry weight.

Mrs. SCHNEIDER. And our estimates for revenue are really the most conservative. They have been done with a great deal of caution. We are basing it on a wet weight, but it is a very conservative revenue projection.

Mr. GREGG. And they are $1.4 billion?

Mr. WYDEN. We would raise $285 million a year for each of the 5 years.

Mr. GREGG. Why do you tax deep well injection at one-fourth of the land fill rate, when you figure that deep well injection really has some very serious environmental implications?

Mrs. SCHNEIDER. The reason we do that is because we think it is only appropriate that you recognize the high water content of the wastes that are injected into deep wells. And as a member of the Science and Technology Committee, I will say that there is no conclusive evidence that deep well injection is the most environmentally sound mode of disposing of waste, but yet we feel that we have to be fair in dealing with the chemical industry also, and so we have achieved what I believe is a balance in choosing to go with the wet weight and to tax it at the rate that we have recommended.

Mr. GREGG. Thank you.

Mr. DOWNEY. Mr. Crane.

Mr. CRANE. Thank you, Mr. Chairman.

Let me make sure that I have clear in my mind the thrust of your bill. It is not really to deal with the Superfund's paramount objective of cleaning up old waste sites where we cannot identify the culprit.

Mrs. SCHNEIDER. That is correct. The bill is preventive medicine. We are planning on preventing those sites from occurring in the future by providing an economic incentive to recycle and reuse hazardous wastes immediately.

Mr. CRANE. At the present time, do we have no burden put on industry for disposing of their waste?

Mr. WYDEN. Well, the way the situation works today, Mr. Crane, is that the fees are based on the raw materials used in the manufacturing process. They are essentially paid at the front end——

Mr. CRANE. Well, wait—are you talking about Superfund?

Mr. WYDEN. Yes.

Mr. CRANE. Oh, well, I am not talking about Superfund, because your bill does not address that.

Mr. WYDEN. I apologize.

Mr. CRANE. I am talking about, if a company today is producing toxic waste, it must under existing law either do it with a midnight dump and run the risk of a penalty under RCRA, or it must contract with some waste management firm for a responsible disposal—and obviously, they are charged for that.

I gathered from your testimony that your concern is that those sites are unsafe, and that the purpose of adding money to the waste-end disposal is to guarantee that we have safe sites?

Mr. WYDEN. Well, we want to reduce the need for sites in the future. We have taken the same basic premise embodied in other statutes, like the RCRA law, and that is that there really is not anything such thing as a safe landfill. Our measure, we think, will reduce the likelihood that there will be landfills in the future by giving corporate managers in the country financial incentive to recycle, to treat, not produce the waste in the first place.

Mr. CRANE. I see, because that is a concern I had—Dow Chemical, for example, explained that about 97 percent of the waste they produce, they handle through recycling. So it is that final 3 percent that they have got to figure out how to dispose of.

Well, if that is the thrust of your legislation, I find that a very attractive idea. I am not sure that it appropriately belongs in a Superfund bill. It may more likely belong in separate legislation that the committee should consider and, I think, implement. Anything that provides incentives to industry to deal with that problem internally is, to me, good legislation, and I think the waste-end emphasis is a proper one, I mean, looking to current producers of toxic waste. My concern has been looking at the Superfund problem, that I think all of that should come out of general revenues, because we cannot identify who did it. We have already agreed it is a national problem. We are putting a burden of production cost on industries at a time when we are running these yawning national deficits in our trade balance, and I just would look very much with disfavor on trying to single out any industry for that old problem. But yours is dealing with the current and future problems, and I salute you for your endeavors.

Mr. WYDEN. Thank you.

Mrs. SCHNEIDER. Thank you.

Mr. CRANE. Thank you, Mr. Chairman.

Mr. DOWNEY. Mr. Daub.

Mr. DAUB. Mr. Chairman, thank you.

I am interested in the work that you are doing, and I spent several years on the Nebraska Department of Environmental Control Council, as a lawyer. I also served on our Omaha Sludge Management Task Force in the largest city in our State. I represented the chemical industry on those two bodies. I worked in the livestock feed manufacturing business for 10 years. So I got a chance to learn a little bit about waste-end management, toxic dumpsites, waste cleanup, RCRA, particulate emission, sludge management—all of those kinds of things that I think you are trying to deal with.

If we understood in our deliberations that by revisiting the feedstock tax, we are not really going to get that much more revenue, and if we then consider waste-end tax a broader-based tax or, as my colleague Mr. Crane just said, general revenue or a combination of all of these, you propose in yours, if we add it to our thinking here in this committee, to raise about $285 million per year——

Mrs. SCHNEIDER. Right, yes.

Mr. DAUB [continuing]. You argue that this is reliable, that as a source of funding, you think that is reliable. Could you touch upon that point? How could this be reliable?

Mr. WYDEN. What we found—there have been a number of followup studies of State waste-end taxes that have shown in subsequent years that they have performed quite well. Last summer, EPA surveyed eight States with waste-end taxes. The studies found generally that revenues matched or exceeded predictions in most cases. We think that is one of the reasons that you have got 20 States out there today with waste-end taxes, is that you can find a steady, revenue stream on an ongoing basis, and that is what the survey done by EPA last summer in the eight States found.

Mr. DAUB. I just ask it, I guess, for the academic purposes of inquiring how if, in the beginning, like a lottery, one wishes to raise money, and we find that it becomes less and less attractive because you get frustrated because you do not win, so you have to raise the promotion and the advertising expenses, and you have to raise the winning kitty, and pretty soon you find out that you are not raising the revenue, after all of that, that you need. If you are going to reduce waste by the encouragers in your bill, how can in the end that be a very reliable generator of revenue—because if we are reducing the waste, the revenues ought to go down.

Mrs. SCHNEIDER. Well, we would be very happy to submit to you on a detail by detail basis the revenue results of various hazardous wastes being disposed of.

[The following was subsequently received:]

SUPPLEMENTAL MATERIAL SUPPLIED BY MRS. SCHNEIDER

WHAT TYPES OF WASTE ARE TAXABLE?

All wastes classified as hazardous under the Resource Conservation and Recovery Act at the time this waste-end tax legislation is enacted into law would be taxable. These include toxic as well as characteristic wastes that are ignitable, corrosive, or reactive.

ARE ANY HAZARDOUS WASTES EXCLUDED FROM THE TAX?

All hazardous wastes not covered by RCRA's regulatory framework are exempt from the tax. Examples include small generator wastes, mining waste, the temporary on-site storage of hazardous waste (90-day limit), and the discharge of effluents permitted under the Clean Water Act.

Waste removed from a Superfund site to a permitted land disposal facility would not be taxed, in order to help keep down the cost of cleanup. While it would be more appropriate to destroy Superfund wastes than to shift them to another land disposal facility, the choice of cleanup method under the program should be determined under guidelines provided by Congress, rather than through waste-end tax policy.

In addition, a number of existing disposal sites are expected to close, due to their inability to meet more stringent operating requirements imposed by Congress during reauthorization of RCRA. Wastes removed from these closed sites to permitted facilities would not be taxed. As with the exclusion for Superfund wastes, the rationale is to avoid creating obstacles to compliance with RCRA regulations.

HOW MUCH REVENUE WOULD THE TAX RAISE?

The bill would raise an estimated $286 million per year, a figure based on data derived from EPA and the Chemical Manufacturers Association. The revenue estimated is calculated below:

Method	Volume	Tax [per ton]	Revenue [millions]
Landfills	[1] 3	$20	$60
Land treatment and waste piles	[1] 1	20	20
Disposal impoundments	[1] 1	20	20
Injection wells	[1] 32	5	160
Convert from metric to English tons			26
Total revenue			286

[1] Million metric tons.

All volume estimates are expressed in metric tons, while the tax is based on English tons (Metric Tons:English Tons equal 1.1:1). The volume data is taken from EPA's Westat Survey, except for disposal impoundment figures, which are derived from a survey conducted by the Chemical Manufacturers Association.

Mr. DAUB. Are you saying there is just enough of it out there that we do not have to worry about that for a while?

Mrs. SCHNEIDER. Enough what—there is enough hazardous waste out there—well, as I said in my testimony, the current estimates of how much it will cost to cleanup the hazardous waste sites now is anywhere from $20 to $100 billion.

This proposal has a twofold agenda to it. One is, it is an effort toward preventive medicine. I think we as decisionmakers have to change our mindset. We are constantly working on a crisis management basis and saying, "My goodness, here is a Love Canal. Let's throw money at it and clean it up."

What this piece of legislation does is provide a new approach toward dealing with it by recycling and reusing hazardous waste to prevent future hazardous waste sites from occurring.

Two, the purpose of the bill is to raise some revenue, albeit modest and conservative in its projections. Now, as we go along years down the line, as responsible legislators, we may have to look again at the revenue, and it will hopefully be decreasing. That is the purpose. We will have been achieving our desired agenda, and then we will have to look for revenue elsewhere. But I do not see that time coming for quite a few years down the line.

Mr. DAUB. Thank you very much. That was articulately said.

Mr. WYDEN. If I might just respond to the gentleman's question, the Office of Technology Assessment has said that about 75 percent of the materials used in the manufacturing process could be recycled. We think if you give corporate managers a financial incentive, they will be recycled. It is kind of a revolutionary idea that we are talking about. If this year's Superfund goes forward with the waste-end tax, it will be the first environmental program to actually use direct financial incentives to try not to produce hazardous wastes in this country. That is why we think we ought to start in a modest way. We are not saying, throw the feedstock tax out the window. We are saying use this as part of the effort to raise the revenue we need to clean up the site.

Mr. DAUB. I want to thank you both for your contribution. Your thinking is innovative. I am attracted to it. I would just point out that it becomes difficult to reconcile. Mr. Florio's admonition to us that it all be done on the revenue side, with the most reliable, permanent, long-range planning that we can do, and then on the other side, try to reconcile a part of what you are saying.

I appreciate your contribution to our record.

Thank you, Mr. Chairman.

[The following was subsequently received:]

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, DC, May 31, 1985.

Hon. DAN ROSTENKOWSKI,
Chairman, House Committee on Ways and Means, Longworth House Office Building, Washington, DC.

DEAR DAN: Thank you for allowing me to testify in front of the Ways and Means Committee at its recent Superfund hearings to discuss my waste-end tax proposal.

In addition to the waste-end tax, there is another Superfund issue in which I am particularly interested—an exemption for recycled metals from the chemical feedstock tax.

As you know, the benefits of recycling have been recognized by the Congress in past legislation. These benefits include energy and resource conservation, reduced air and water pollution, a reduced U.S. reliance on foreign imports of critical virgin raw materials, and aid to cities and states across the country in their struggle against mushrooming solid waste management problems and costs.

The recycled metals exemption makes sense for several reasons. First, no evidence has been developed or presented by EPA or any other Federal or private agency to establish that recyclable aluminum, copper, nickel or zinc scrap are hazardous materials that should be regulated under the Federal hazardous waste statutes. Superfund legislation, I believe, should correspond as closely as possible to other environmental regulations already on the books; consequently, I don't believe recyclable and recycled scrap metals, which are not listed as hazardous materials under RCRA, should bear the burden of a Superfund "chemical tax."

Further, recycling is the most efficient and effective alternative to EPA's widely criticized "transfer technology." This "technology" has created a toxic waste merry-go-round, whereby dumped hazardous wastes are simply moved to another location that often becomes a Superfund site itself. Taxing recycling will only serve to encourage the continued reliance on the ill-advised transfer technology. We should be encouraging recycling, not encouraging processes that are creating new Superfund sites.

Moreover, Superfund taxation of recycled metals can mean double or multiple taxation for these metals, which raises serious questions of fairness and places these recycled metals at a competitive disadvantage. Such a tax scheme would appear to run contrary to the congressional mandate to maximize recycling contained in the Resource Conservation and Recovery Act.

Finally, I should note that both the National Association of Recycling Industries and the Institute of Scrap Iron and Steel are united in support of the full recycling exemption.

In conclusion, I am fully aware of the need to raise sufficient Superfund revenues to tackle the critical task of cleaning up this nation's hazardous waste dumps. As we move ahead, however, I hope every effort can be made to make sure Superfund taxing mechanisms remain consistent with our other environmental laws and that we do not hinder the ability of America's recycling industry to function efficiently and effectively.

I would appreciate your making these comments a part of the hearing record for the Superfund hearing the Committee held on May 9.

With warm regards,

Sincerely,

RON WYDEN,
Member of Congress.

Mr. DOWNEY. Are there further questions for our colleagues?

[No response.]

Mr. DOWNEY. If not, I want to thank you for your appearance and your very thoughtful testimony.

Thank you.

The committee will next hear from Mr. Thomas, who is the Administrator of the Environmental Protection Agency.

Welcome, Mr. Thomas.

Also, the committee will listen in tandem to Mikel Rollyson, the Tax Legislative Counsel for the Department of the Treasury.

Mr. Thomas, we are sorry we got you on so late.

STATEMENT OF LEE M. THOMAS, ADMINISTRATOR, ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY DR. JOHN SKINNER, DIRECTOR, HAZARDOUS WASTE REGULATORY OFFICE

Mr. THOMAS. Thank you, Mr. Chairman, members of the committee.

I have with me Dr. John Skinner, who is Director of our Hazadous Waste Regulatory Office, and I think Dr. Skinner will be able to assist me in responding to any questions you may have as we talk about the RCRA Regulatory Program as it relates to taxes.

You have a copy of my statement for the record. At your pleasure, I could highlight that and try to emphasize the major points.

Mr. DOWNEY. Your statement will be entered in the record without objection, and any material you want appended thereto.

Mr. THOMAS. Thank you, sir.

The committee is primarily interested, as you indicated, in discussing revenue needs and revenue measures as they relate to the Superfund Program. As you know, the administration has proposed a reauthorization measure for Superfund that includes increasing and expanding the size of the program, and additional revenue measures.

I will speak specifically to our recommendations for the size of the program and how we arrived at what we thought was the appropriate pace of the program, and Mr. Rollyson will speak specifically to the revenue measures that we have proposed.

As I think many of you know, the administration of the Superfund program and dealing with the problem of toxic waste cleanup is indeed a challenge—a challenge in a number of respects.

The sites present major management issues, scientific and technical issues. There are many legal concerns, as well as community concerns, and dealing with the individuals effectively, who live near the sites and the concerns that they have, has to be an integral part of dealing with each Superfund site itself.

So there are many challenges as we deal with each site.

The approach that we use in trying to identify, assess and clean up these Superfund sites, and then integrate into that process our enforcement authorities and responsibilities that you gave us, is basically a four-part process.

First, we have a responsibility to identify and assess all potential hazardous waste sites in this country that require or may require cleanup. And so far, we have assessed with the States about 15,000 sites. We have projected that there may be as many as 20,000 to 25,000 sites that we need to assess. But we think we are well along; as a matter of fact, we think we have completed over half the work in the assessment phase. That is a major priority and has been for the last couple of years, and we hope to complete that process in the next year to 2 years—that is, all the assessments.

Now, once a site is assessed, we determine whether it presents an immediate threat to public health or the environment and therefore needs an immediate response, or whether it represents a chronic threat and should receive priority attention under our long-term or remedial program.

If it is an immediate threat, we want to respond to it immediately, and we use the authorities you gave us for our emergency program to do just that. We respond immediately with the emergency authorities you gave us, 100 percent Federal funding, and we either clean up that site or we stabilize it, so that there is no longer an immediate threat until we come through with our priority long-term cleanup effort to clean up the site.

Finally, when we get into our long-term cleanup program, it basically has four parts. First, we do a detailed engineering assessment of the site to determine not only the full extent of the problem, but the solution that will present a permanent remedy at that site.

We then determine the remedy, design the remedy, implement the construction phase of that project, and then go through a monitoring phase to ensure that our remedy was effective before we move away from that site and take it off of our priority list. On average, we found, it takes between 4 to 5 years to complete a long-term cleanup effort. Once we start an engineering study at a site until we complete it is on average about a 4½ year process.

Additionally, we find that on average, it costs us about $8.1 million to deal with that long-term cleanup, per site. The short-term emergency immediate response effort costs on average about $350,000 per site, short-term stabilization.

So those are the factors that we use as far as costing is concerned when we make projections for our program for the next 5 years.

In our reauthorization proposal that we submitted to the Hill, we looked at two basic factors in determining what the pace should be. We looked at the threat that was presented to public health and the environment, and we looked at our ability to manage a program effectively and efficiently; trying to balance those two things is what then gave us the pace that we projected for the next 5 years.

As you know, the Superfund Program got off to a comparatively slow start during the first couple of years. It is a complex program and difficult to move out on. We think over the last 2 years we have substantially increased the pace of the program to the point where we think we have major momentum in the cleanup effort. We want to maintain and build on that pace over the next 5 years.

Let me indicate to you, using a couple of charts, what I am suggesting as far as pace in this program. We think it responds to the threat to public health and the environment. We also think it builds on the pace that we have established to increase that pace over the next 5 years.

This is the long-term cleanup program, the priority sites, the ones that you mostly hear about—not our immediate removal program, but our remedial program. The various colors reflect the engineering studies, the design phase, and the construction phase of a site. As I indicated, it takes about 4½ years to get from the engineering phase through construction and monitoring.

As you can see, it will build over the 5-year period of time. As you can also see, the construction portion of the projects will increase significantly during that period of time as we begin to get the payoff of the pipeline we have initiated over the last 4 years, to the point that by that final year, you can see we are starting 220 new sites, but we are actually managing 800 sites.

Now let me turn to this second chart, because I think it makes a point that I would like to leave with you when we talk about pace.

How many sites we start per year is an important element. But how many sites we are managing simultaneously is more important when we look at what we can manage effectively.

Mr. Downey. Mr. Thomas, could you just move the chart up here, a little closer?

Mr. Thomas. Certainly.

What this reflects, Mr. Chairman, and members of the committee, as you look at fiscal year 1986, it reflects that under the emergency removal program, which is our immediate response program, we project 238 sites will be responded to this year. That is using the Superfund and using our enforcement authorities. So under the Superfund Program, we are projecting that 238 sites will be cleaned up or stabilized, using those authorities.

Now, we have projected that as pretty well a steady state every year. We complete those cleanups in less than a year, generally, the 238 I have referenced. So as you look across every year of the 5 years, we have projected that many new sites will be dealt with.

Now, in addition to that, we will be starting new sites, which is the lower number that is reflected as far as engineering studies, the 180 that you see for fiscal year 1986, building to 200 in fiscal year 1990.

As you can see, that top graph reflects how many cumulative sites we are actually working on in any one year. This year, for instance, we are working on nearly 500 sites. Next year, we project we will have nearly 580 sites with simultaneous cleanup action underway. Add to that the emergency sites we are working on, and you will see that we have about 800 of these Superfund sites across the country that we are managing. That will build to over 1,000 sites in fiscal year 1990.

If you take into account the management complexity, the scientific problems, the technical problems, the community issues, and the legal issues associated with each site, you can multiply in your mind that times 1,000, and you will understand the management issue that I face in managing this program.

That becomes a primary constraint, as I look at how fast we can move this program while at the same time ensuring that I am meeting the threat to public health or the environment. I do not want a single site that presents an immediate threat to go unresponded to. That is why I have that emergency removal program. That is why I am running it at over 200 sites a year. At the same time, I want to make sure I am continuing a strong momentum to clean up those long-term sites.

If you have 1 site, 5 sites, 10 sites in your district, you know the community concerns, you know the issues associated with those sites. Multiply it by 1,000 or by 100, and you know what we are dealing with across the country.

So a major issue to us is trying to come forward with a pace of the program that is an adequate pace and a strong pace, and at the same time, that we can manage, that we can give you assurances that we will use the funds you appropriate wisely. I want to ensure that it is managed well, and I will be accountable for assuring that the funds are spent well.

Now, the end result of the program that we have proposed is that at the conclusion of 5 years, we will have taken emergency removal action at nearly 2,000 sites across the country, at sites that presented immediate threats. We will have initiated engineering studies at the long-term sites at nearly 1,500 of those priority sites across the country. We will have been through the design stage at nearly 1,000. We will be in or finished construction at over 900. And we will have completed clean-up at the big priority sites at nearly 650 of the sites.

We think at the end of that 5-year period of time, we would have made substantial headway in completing the cleanup of this major problem in this country.

At the same time, we think we can be accountable and held accountable for the management efficiency and effectiveness of this program over that 5-year period of time.

Mr. Chairman, I appreciate the opportunity to present that portion of our testimony.

[The prepared statement follows:]

STATEMENT OF LEE M. THOMAS, ADMINISTRATOR, U.S. ENVIRONMENTAL PROTECTION AGENCY

Mr. Chairman and members of the Committee. It is a pleasure to be here today to talk about the Administration's proposal to reauthorize the Comprehensive Environmental Response, Compensation, and Liability Act—the Superfund. In particular, I want to lay out for you a complete rationale for the cost and revenue projections supporting our proposed funding level and mention our proposed financing provisions.

As you know, on a number of occasions I have expressed concerns about the size and scope of some of the reauthorization options considered by Congress. Historically, there has been a tendency on the part of the Federal government, whenever it deals with a major national problem, to equate total funding with the effectiveness of a particular solution. The more we spend, the more we must be doing. Or so that philosophy goes.

With Superfund, this is not the case. We are faced with a national challenge that is enormous in scope and implication. But during the past two years, we have worked hard to fashion a program capable of dealing with both the immediate and the long-term consequences of the hazardous waste problem. It is essential, as we prepare to extend that effort, to make sure we stay on course with a program which has been proven effective.

I am convinced that the Administration's Superfund reauthorization bill is a sound and responsible approach for implementing our hazardous waste cleanup program for the next five years. It triples resources available for actual cleanup work. It focuses those resources on the most serious problems first—uncontrolled and abandoned hazardous substance sites. And it strengthens our ability to enforce the law and impose stringent new penalties on those who violate it.

In short, the bill gives EPA the resources and the authorities we need to continue to build on the cleanup momentum established during the past two years. The President told me to make Superfund my top legislative priority for 1985, and I have. I will work with you to assure that the Superfund program is allowed to continue with its vital mission.

As I said, our proposal will substantially increase the size of the fund. It will generate some $5.3 billion during the next five years, principally from taxes on those industries linked directly to the nation's hazardous waste problems. Coupled with an aggressive enforcement program which we project will yield an additional $2 billion in private-party cleanup, we anticipate a program likely to generate approximately $7.5 billion in total cleanup activity between 1986 and 1990.

With this resource base, we will be able to expand our emergency cleanup program for addressing immediate threats to human health and the environment. In the long-term arena, we will work toward permanent solutions to chronic hazards. And we will guarantee that affected communities and individual citizens have a meaningful role to play in all of our cleanup activities.

My purpose today is not to address the details of the Administration's proposal, although I am happy to answer any questions you may have. Rather, I would like to spend my time here talking through with you why I feel this bill provides us with all the resources we can use during the next five years. I want to explain where we see the funding coming from, and what we expect to be buying in the way of cleanup.

It is my hope that we will conclude today's hearing with a better understanding of the Administration's package, the rationale for those options we have selected in crafting it, the complexity of the Superfund program as it moves into high gear, and the reasons why this bill represents our best bet for moving forward with the second phase of this national priority program.

Putting together the reauthorization package has been a difficult challenge. The original Superfund law was sweeping in nature and scope. But it was designed to address a problem of unclear magnitude, in the absence of any first-hand experience.

Today, we have that experience. Superfund reflects over four years of experience. We have a far better appreciation for the complexity of the problem we face, and for its enormity. We have our feet on the ground and we are making progress.

We have in place an effective program for identifying potentially hazardous sites, evaluating them, assessing the risks posed by each, and selecting those requiring Federal attention. More than 800 sites are now on our National Priorities List. As many as 2,000 sites—perhaps more—will eventually be identified as most in need of long-term cleanup, often using Federal resources.

But the Superfund law does more. It also gives us tools for protecting human health and the environment from immediate dangers caused by unexpected releases of hazardous substances. Under this emergency cleanup authority we can take a variety of steps to address immediate dangers at any site.

It is these two primary authorities—long-term authority to clean up sites posing chronic threats and emergency authority to eliminate immediate hazards—that are the framework within which we plan for the future.

Based on projections for how many new long- and short-term activities we will start each year, historic data on how long it takes to conduct various cleanup steps, and experience with costs, we are able to put forward what we feel are reliable estimates of our needs over the next five years.

Long-term cleanup work at national priority sites has three distinct phases. First, there is the planning phase during which engineers and other technical professionals carefully characterize the site and assess the feasibility of cleanup options. Second, once we decide on a cleanup strategy, we design the remedy. Finally, we actually implement the remedy. This is generally a complex construction project.

Typically, it takes about 18 months to carry out the first step. Our remedial investigations and feasibility studies look at all site factors, including geological structure, soil characteristics, mixes and concentrations of contaminants, and hydrogeology. With this information, we determine the extent of the problem, including whether groundwater has been contaminated.

We spend on average about $800,000 for each of these comprehensive studies. But without them, it is impossible to undertake an effective cleanup. Every Superfund site is unique. There is no generic cleanup strategy. A complete remedial plan must be developed for each. The Federal government pays for 100% of the cost of these studies.

On the basis of the information we gather, we make our cleanup decisions. Because each site is unique, each remedy requires its own special design. Each is a detailed engineering blueprint. Each takes about nine months to complete at a cost of $440,000. The Federal government picks up the entire cost.

Construction of the remedy is the most costly portion of the cleanup process. Our experiences to date indicate the design and construction of an individual remedy costs about $7.2 million. The Federal government pays for 90% of this cost, with the State picking up the remaining 10%. Construction can take a year to complete.

Once a site has been cleaned up, we conduct operations and maintenance activities to make certain the remedy is effective. The Federal government pays for 90% of these costs for the first year, and the State pays the remaining 10%. Thereafter, the State picks up all O&M costs.

Sometimes, sites pose an immediate threat to human health or the environment. In these cases, there is no time to conduct a comprehensive study.

If the responsible parties do not act, or cannot, we must be able right away to address known explosion hazards, threats of human contact, or the possibility of fire. We do this using our emergency response authority.

A typical removal action takes from one to six months to complete, depending on the individual characteristics of the site. Some have cost in excess of $1 million, but the average cost is $330,000. When the government conducts an emergency cleanup, the entire cost is borne by EPA.

Using the numbers I have just reviewed, all based upon over four years of first-hand experience, we have been able to project our resource needs during the next five years. Several important assumptions are built into these estimates:

The Federal program will start engineering feasibility studies at 130 new sites annually.

Responsible parties will undertake a gradually increasing number of new starts each year, beginning with 50 in 1986 and growing to 90 in 1990.

There will be 238 emergency cleanups annually, including 190 by the Federal program and 48 by responsible parties.

Because each step in the cleanup process—studies, design, construction, and O&M—takes a different amount of time, the overall program operates like a pipeline. Thus, while we start roughly the same number of new sites each year, over time we find ourselves managing an ever-increasing total number of sites in various stages of cleanup, simultaneously.

This is a critical concept in understanding the limitations I see on how fast we can clean up our priority sites. It is a complex management problem. My concern is that we will allow ourselves to think that the more money we spend in a given year, the more cleanup we will accomplish.

I am convinced that there is a practical limit to the number of sites we can deal with at one time. And I am convinced that we are rapidly approaching that saturation point.

Allow me to demonstrate the pipeline effect I have just described. Our projections show that the number of new starts annually will increase very slowly, due entirely to a gradually increasing number of private party cleanups. Yet between 1986 and 1990, the number of sites with remedial activity underway will grow dramatically.

In 1986, we expect to start 180 new engineering feasibility studies, including 50 by responsible parties. That's the front-end of the pipeline. But on-going work at other sites means we will actually be managing 584 long-term sites at the close of that year. By 1988, we expect to start 200 new planning studies, including 70 by responsible parties. Yet, because of the pipeline effect of on-going work, we will be managing 726 remedial sites in various stages of cleanup.

And, by 1990, we will see 220 new starts, including 90 by responsible parties. But we will be managing a total of 811 long-term sites, each with unique circumstances.

And don't forget, we expect to be involved with 238 emergency cleanups in each of those years on top of our remedial projects. So by 1990, we will be dealing with well over 1,000 sites, all at the same time.

I say to you without any reservation, this is the ultimate management challenge. The American people have very high expectations from the Superfund program. I am committed to fulfilling their reasonable expectations. I fear that a program any larger than the one I have just outlined could collapse of its own weight. The resulting waste and fraud would be devastating.

Congress and the American people must recognize the many constraints that we are dealing with in trying to implement Superfund. This is a multi-billion dollar program. The sheer size of the fund makes it a prime candidate for abuse. I will do all I can to prevent this through rigid systems of accountability. I ask your help in allowing me to retain the flexibility I need to succeed.

In addition, we face several other constraints:

Technical Constraints: Depending on the level of cleanup required by a reauthorized Superfund law and any prohibitions against off-site remedies, landfill capacity will be a critical issue in the years ahead. Presently, there are few double-lined facilities which can accept waste. There may be regional shortfalls, at times caused by transportation problems.

Permanent Solution Constraints: No one wants wastes from one Superfund site to contribute to the problems of future priority sites. There are some promising technologies on the horizon that provide alternatives to land disposal, such as incineration and chemical and biological stabilization. Although some are proven feasible, their commercial availability remains limited. As demand for these technologies increases, we are hopeful available capacities will grow.

Laboratory Capacity Constraints: Current national laboratory capacity is short of our needs. We are working to improve the reliability and responsivness of our contract labs, but problems remain.

Managerial Constraints: As I have already suggested, we face an enormous management challenge during the next five years of Superfund. The pace at which the program is expanding, particularly as more and more sites move through the pipeline to the expensive design and construction phases, makes effective management difficult. In addition to overseeing the complex work at hundreds of sites, we must recruit and train professional staff, provide adequate workspace, obtain and maintain necessary equipment, provide administrative and logistical support, and establish the contract capacity needed to handle the additional workload.

Personnel Constraints: In particular, we face a difficult challenge in finding, hiring and retaining people capable of carrying this program out. We are competing with the private sector for specialized talent. Often, we simply cannot offer the compensation, working environment and incentives that the private sector can for these individuals. Yet our engineers must oversee the work of theirs. Our managers must supervise the technical and administrative activities associated with hundreds of projects. And our attorneys must go head to head with the best lawyers the private sector has to offer in multi-million dollar litigation.

Let me stress at this point that I am not painting a picture of gloom and despair. We have, during the past four years, built a very effective cadre of managers, technical people, scientists, engineers and lawyers. But we must continue to build our team while, at the same time, working to retain the excellent people we already have.

In this area of people, we find the Federal system is one major impediment to faster expansion of our technical capabilities. It takes an average of four months to bring on an entry-level hydrogeologist, chemist or environmental scientist. These people, despite their qualifications, require a period of time for training to understand the program, the Federal system, and their roles in it.

At the senior level, the problems are even greater. We face the same rigid recruitment system. And there are not enough well trained people with experience in hazardous waste cleanup. The private sector is a fierce competitor for these talented men and women. Many times, we are simply priced out of the market.

Let me recap, then, my concern over the expectations I think exist among many members of Congress and a large segment of the American people who think getting the cleanup job done faster is nothing more than a matter of dollars. It isn't.

In 1990 alone, we will have work underway at more than 1,000 long- and short-term sites. That's a management challenge.

At every site, we face difficult technical problems, laboratory constraints, and the prospects of disposal capacity shortfalls. Those are management challenges.

And we are engaged in fierce competition with the private sector for talented, well-trained professionals needed to make this program work. That's a management challenge.

The program we have put forward in the form of S.494, the Administration's proposal to reauthorize Superfund through 1990, is a blueprint for achieving significant cleanup in light of all of these constraints. It is carefully thought out and based on first-hand experience. It will buy a substantial amount of cleanup. It will give us powerful tools to foster a significant chunk of private-party cleanup in addition.

Our bill will yield some $7.5 billion worth of cleanup through 1990, including $5.3 billion in Federally financed work and another $2 billion or so in private-party cleanup. These resources will purchase impressive amounts of cleanup. By 1990, we project that we will have undertaken 1,450 engineering feasibility studies, about 1,000 designs, and approximately 900 construction projects. Remedial work will be completed at well over 600 sites. In addition, we expect to have conducted nearly 1,900 emergency cleanups.

We will not be finished with the Superfund mission by 1990. But we will have made a significant dent in the problem. We will be well on our way to achieving one of the most ambitious environmental goals ever set.

The next question that comes to mind is where will we get the $5.3 billion needed to make this program work? The Administration is convinced these funds can be raised in a way that is fair and equitable, without having any impact on the national deficit.

We have proposed a program financed largely through taxes on petrochemical feedstocks and hazardous wastes generated in the manufacturing process. Other important components in our financing scheme are interest on Fund investments and recoveries of past Fund expenditures from responsible parties.

Our current feedstock tax would continue without change. We have found it to be a reliable source of significant funds, yet one that has not hurt the competitiveness of our chemical producers. We are concerned, however, that an expansion of this particular tax could do harm to the chemical industry.

The waste-end tax we have proposed will generate some $600 million annually in new revenues. Its design reflects our belief that those companies generating hazardous wastes, and profiting from the activities that yielded those wastes, are logical candidates to help finance our expanded cleanup program.

Although the same companies that pay the feedstock tax will also contribute through the waste-end mechanism, this taxing scheme will also bring into the system thousands of other companies that have not paid their fair share in the past. We think this adds some needed equity to our effort to raise the substantial funds required to finance the next five years of cleanup.

We are convinced that there is no need to tap general revenues to fund Superfund. These taxes, plus interest and recovered costs, will provide us with the revenues we need to succeed.

Let's look quickly at the cost-recovery element of our financing equation. We expect, over the next several years, to see cost recovery become a major source of cleanup funds. There has been some concern to date over the slow pace of cost recovery.

Much of the explanation is related to the fact that cost-recovery cases cannot be initiated until much of the cleanup work has been completed. And, as we all know, it has only been in the past two years or so that the actual pace of cleanup has picked up.

Costs recovered to date total nearly $12 million. But we have initiated cost-recovery actions in cases worth more than $124 million. Just as the number of sites cleaned up will depend upon the remedial pipeline I discussed earlier, so too will the pace of cost recovery.

As a rule of thumb, cost recovery takes two to three years to complete for each site. In cases where we have conducted a removal action, cost recovery is initiated within one year after the emergency action is completed. Funds are not likely to be recovered, however, until about two and one-half years after completion of the removal.

In cases of long-term cleanup, cost recovery is initiated during the construction phase. But we do not expect to actually recover our funds until about two years after construction has been completed.

Now that we have a significant number of projects well into the cleanup process, we are beginning to take more and more responsible parties to the courthouse to recover our expenditures. Our earlier investments should pay off in the next five years.

In 1986, we expect to receive nearly $32 million in recovered costs. That will increase to nearly $55 million in 1987, and grow to $190 million in 1990. The total of recovered costs from 1986 through 1990 is expected to be $477 million. This will be a significant supplement to our tax revenues.

Finally, we anticipate that our aggressive enforcement program will yield some $2 billion in actual cleanup work by responsible parties through 1990. These will be funds from private sources, not out of Superfund.

Our record of private-party cleanup settlements has been an impressive one during the past two years. By effectively using the current enforcement tools, including strict, joint and several liability, we have been able to convince more and more responsible parties that it is in everyone's best interest to reach an acceptable settlement and get on with cleanup.

Through 1990, we project that responsible parties will complete more than $2 billion worth of cleanup. During that same period of time, we anticipate that the value of cleanup started by responsible parties will approach $3 billion.

Let me conclude now by restating what I have been saying for a long time. Superfund is a vital program. It is one of EPA's top priorities. Reauthorization of Superfund is our number one legislative goal.

During the past two years, we have put Superfund implementation on a sound footing. The program has expanded dramatically. We are seeing important results. It is absolutely essential that Superfund be reauthorized this year in order to keep our cleanup efforts moving at the pace we have established.

I am convinced that we are approaching the point where Superfund is operating at an optimum level. By the end of 1990, under our proposal, we will be working at more than 1,000 long- and short-term sites. Beyond this level of activity, there is a very real possibility that the program could begin to lose the management accountability that we have worked so hard to establish. The last thing we need is for Superfund to become tainted by charges of mismanagement, waste, fraud and abuse.

In addition to my concern that if we go past the Administration's proposed funding level we will do nothing more than throw money at the problem, I have also tried to lay out before this Committee the managerial, technical and administrative constraints that do in fact affect our program.

Our proposal is a sound one, based on first-hand experience and a recognition of the complexity of our mission. I urge you to adopt it. Thank you for allowing me to be here today. I would be happy to answer your questions.

Mr. DOWNEY. Thank you, Mr. Thomas.

Mr. Rollyson.

STATEMENT OF MIKEL M. ROLLYSON, TAX LEGISLATIVE COUNSEL, U.S. DEPARTMENT OF THE TREASURY

Mr. ROLLYSON. Thank you, Mr. Chairman.

I will briefly summarize my written statement for you, also.

Essentially, my testimony will relate to how the administration proposes to fund the Superfund. Essentially, we are proposing that the Superfund be funded through the current feedstock tax, essentially, without change, and through a waste management tax, which I will describe more fully in just a moment.

With respect to the feedstock tax, no new chemicals would be added to or deleted from the current list of taxed chemicals, and no change would be made in the current rate structure. Moreover, the bill would not authorize any funds to be provided through the general revenues.

Let me emphasize that since the administration's proposal was introduced, we have had numerous meetings with industry representatives. Our initial proposal was based on certain data primarily developed from an EPA study conducted in 1981.

Since the introduction of our proposal, we have, based upon this new information, revised certain provisions of the bill as introduced. What I will describe now is the revised administration proposal.

Essentially, the proposal would impose an excise tax on the management of hazardous waste at a waste management unit subject to permit requirements under the RCRA system. The tax would be imposed on a wet-weight basis, on any waste identified or listed under section 3001 of the Solid Waste Disposal Act as of the date of enactment. Wastes that are subsequently identified or listed as hazardous waste would not be subject to the tax, absent later congressional action.

The tax would also be imposed on the ocean disposal of hazardous waste, or on the export of hazardous waste. The owner or operator of the RCRA-permitted facility would be liable for the tax.

The rates of tax on hazardous wastes would vary depending upon how the waste is managed.

Hazardous waste received at a wastewater facility would be taxed at a rate of 25 cents per ton over the reauthorization period. Hazardous waste received at an injection well facility would be taxed at a rate of $5 per ton over the reauthorization period. Waste received at landfills, surface impoundments, other than impoundments contained in wastewater or deep well injection facilities, and waste received at waste piles or land treatment units would be taxed at an initial rate of $35 per ton, increasing to $40 per ton over the reauthorization period.

And finally, waste received at all other permitted units would be taxed at an initial rate of $6 per ton, increasing to $7.80 per ton over the reauthorization period.

The bill also contains an automatic adjustment formula, which would be scheduled to take effect in October 1987, to ensure that the projected revenues are in fact collected.

I might add that these rates that I have just described are somewhat different from the rates initially contained in the administration's proposal, and do reflect to a significant degree the latter industry input that we have received.

In summary, under our proposal, the Superfund would be funded by revenues generated by the existing excise tax on crude oil, imported petroleum products, and feedstock chemicals, and by an excise tax on the management of hazardous waste.

I would like to say a few words about each of these taxing mechanisms. First of all, with respect to the current feedstock taxes, we would extend these feedstock taxes through September 1990, and these would be the same taxes as are currently imposed on crude oil, petroleum products, and the 42 chemicals that are presently listed as being subject to the tax.

The policy decision that underlies this tax is reflected in the 1980 act that imposed this tax—that the cleanup cost and the payment of damage claims that stem from hazardous waste should be funded by the producers and users of hazardous substances, rather than by the general public.

The feedstock taxes have been criticized on the grounds that they are collected not from the individual firms that may have actually caused the sites that are currently being cleaned up, and at best, this feedstock tax performs or serves a form of rough justice.

While these criticisms are not without merit, the taxes were imposed in recognition of the fact that there are present and future environmental costs associated with the use of hazardous substances, and by taxing the basic building materials used to make hazardous products and waste, these costs are borne by those persons utilizing hazardous materials.

Moreover, the taxed chemicals or derivative products of those chemicals appear in the response sites now being investigated by the EPA.

It has been suggested that the list of chemicals subject to tax should be expanded to include other chemicals that have also appeared in EPA response sites. We do not favor that approach. New sources of funds to support the Superfund should come, if possible, from taxes on the very substances that pose a threat to human health and the environment. We believe that the waste management tax authorized in the administration proposal would be a more efficient mechanism than the feedstock taxes in taxing directly those persons that create hazardous waste.

Finally, the feedstock tax has provided a very stable source of revenue for the Superfund. Collections have run in the neighborhood of $300 million per year, and the Internal Revenue Services has not encountered any substantial difficulties in administering the feedstock taxes.

Let me say a few words now about the wastemanagement tax.

We estimate that we could collect approximately $600 million per year from the waste management tax. The tax would be paid in large measure by those industries that generate the hazardous wastes that are believed to be responsible for many of the existing Superfund sites. Because a closer nexus exists between the generation of hazardous waste and Superfund spending than between the use or production of feedstock chemicals and Superfund spending, this tax more appropriately allocates the environmental costs associated with the use or production of hazardous substances. Data we have received from various industries indicates that the waste management tax would be borne to a large extent by the same taxpayers who currently pay the feedstock taxes. But the tax would expand somewhat the number of taxpayers who are funding the Superfund.

Other legislative proposals for the reauthorization of Superfund would tax the general public by appropriating funds from general revenues or tax businesses whose practices may have no connection to the problems that Superfund addresses. These broad-based taxes have the support of those industries that are subject to the feedstock taxes and those industries that are expected to pay the waste-end taxes or waste management tax.

We understand the interest that these industries have in urging Congress to enact a broad-based tax. We, however, support the congressional decision made at the time of the enactment of CERCLA to fund Superfund expenditures by imposing the environmental cost of using hazardous substances on the industry segment that uses or produces such substances. The administration proposal therefore relies upon the waste management tax as the principal funding source for Superfund, while maintaining the existing feedstock taxes.

The waste management tax, by taxing treatment, storage, and disposal of hazardous waste, is consistent with the EPA Regulatory Program. The regulation of the treatment of hazardous waste, as well as the regulation of disposal and storage of hazardous waste under the Solid Waste Disposal Act, reflects the congressional determination that there are indeed risks associated with the management of hazardous waste.

Under the proposed waste management tax, the lowest tax rates are imposed on wastewater treatment and deep well injection. Each of those waste management techniques involves the use of large volumes of water. The lower rates reflect the dilute concentrations of hazardous waste commonly associated with those management techniques. Higher rates are imposed upon the management of concentrated waste, the highest rate being imposed on the treatment, storage, and disposal of concentrated hazardous waste in or on the land.

The tax would be imposed on a wet-weight basis. This has several distinct advantages. From an environmental standpoint, the wet-weight approach is more consistent with the EPA Regulatory Program and the congressional decision to encourage taxpayers to reduce the volumes of hazardous waste. The dry-weight approach also would ignore the fact that many wastes are extremely toxic at low concentrations. Finally, the wet-weight approach will be significantly easier to administer.

At present, there are approximately 5,000 facilities with permitted RCRA units. Due to the relatively small number of potential taxpayers, we believe this tax could be administered without difficulty. The Internal Revenue Service has estimated that the cost of implementing the tax would not exceed $100,000.

This concludes my remarks, and I would be happy to respond to your questions.

Mr. Downey. Thank you, Mr. Rollyson.

[The prepared statement follows:]

Statement of Mikel M. Rollyson, Tax Legislative Counsel, Department of the Treasury

Mr. Chairman and members of the committee, I am pleased to be here today to discuss the provisions of H.R. 1342, which contains the Administration's proposal for funding the reauthorization of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"). CERCLA established and provides funding for the Hazardous Substance Response Trust Fund, the "Superfund," which is recognized as the Federal Government's primary program for addressing dangerous environmental and health conditions created by the release of hazardous substances into the environment.

I want to emphasize this Administration's continuing commitment to protecting the public and the environment from the release or improper disposal of hazardous chemical substances. As the President stated in his recent State of the Union Address, reauthorization of Superfund is a top Administration priority. The Environmental Protection Agency ("EPA") has submitted a statement that describes the level of funding required for the Superfund and how those funds should be expended. It is our belief that the provisions of H.R. 1342 provide an adequate, stable, and equitable financial base for the Superfund.

BACKGROUND

CERCLA provides the Federal Government with the authority to clean up hazardous substances released into the environment, to pay for restoration of natural resources caused by such substances, and to recover the costs of such cleanup and restoration from the parties responsible for releasing the hazardous substances. The response program is administered by EPA and is financed by the $1.6 billion Superfund.

CERCLA authorizes appropriations to the Superfund equal to $44 million per year for fiscal years 1981 to 1985. The Superfund is principally funded, however, by excise taxes on crude oil, petroleum products, and certain specified chemicals. Section 4611 of the Internal Revenue Code imposes an excise tax of .79 cent a barrel on domestic crude oil received at a United States refinery or exported, on imported crude oil and petroleum products entered into the United States for consumption, use, or warehousing. Section 4661 of the Code imposes an excise tax on 42 listed chemicals sold or used by the manufacturer, producer, or importer of the listed chemicals. These taxed chemicals are either themselves hazardous or are the basic chemical components of nearly all other major inorganic and organic hazardous substances and hazardous wastes. The tax is assessed at rates ranging from 22 cents per ton to $4.87 per ton depending upon the chemical. The tax rates for crude oil, imported petroleum products, and the listed chemicals reflect a Congressional decision to allocate 65 percent of the Superfund tax burden to petrochemicals, 20 percent to inorganic chemicals, and 15 percent to crude oil and imported petroleum products. This allocation was based on estimates of hazardous waste generated by these broad industry segments at the time of enactment of CERCLA. The rate of tax on any chemical, however, is limited to two percent of its wholesale price as of 1980, and in many cases is much less.

CERCLA imposes upon those who generate, transport, or dispose of wastes, the liability for damages caused by a release or threatened release of hazardous substances. Hazardous substances are defined to include those hazardous substances specified under various other environmental statutes as well as substances that EPA determines present substantial danger to the public health or welfare or the environment. Responsible parties may be held strictly, jointly, and severally liable for all response costs associated with removal and cleanup of hazardous substances releases and damages for injury to, destruction of, or loss of natural resources, including the reasonable costs of assessing such injury, destruction, or loss.

Liability limits are fixed by statute. Generally, liability is limited to response costs plus $50 million. The liability limitations do not apply, however, if the release or threatened release is the result of willful misconduct or willful negligence or if the responsible person does not provide assistance and cooperation when requested by a public official. In addition, punitive damages up to three times the response costs incurred may be imposed if the responsible person fails without cause to provide remedial and removal action when ordered by the President.

CERCLA also established the Post-Closure Liability Trust Fund. This fund is obligated to pay all costs arising out of liability imposed by any law with respect to a hazardous waste disposal facility after its closure, provided the facility had received a permit under Subtitle C of the Solid Waste Disposal Act and complied with other regulatory requirements designed to protect against future releases of hazardous substances. Thus, if these prerequisites are satisfied, future liabilities arising from the closed facility are shifted from the responsible parties to the Federal Government. The Post-Closure Liability Trust Fund is funded with revenues collected under section 4681 of the Code, which imposes a tax on hazardous waste received at a qualified hazardous waste disposal facility. The tax is assessed at a flat rate of $2.13 per dry weight ton, and is imposed upon and collected from the owner or operator of the facility.

The authority to collect the taxes enacted by CERCLA, including the tax supporting the Post-Closure Liability Trust Fund, terminates on September 30, 1985.

DESCRIPTION OF THE PROVISIONS OF H.R. 1342

H.R. 1342 would fund a five-year, $5.3 billion Superfund by maintaining the existing level of excise taxes on crude oil, imported petroleum products, and currently listed feedstock chemicals ("feedstock taxes") and by imposing a tax on the management of hazardous waste ("waste management tax"). No chemicals would be added to or deleted from the list of taxed feedstock chemicals, and no change would be made to the present rate structure. The bill would not authorize appropriations from general revenues for the Superfund.

The parameters of the waste management tax component set forth in the Administration proposal were based principally upon a 1981 EPA survey of hazardous waste volumes and management practices. Since the introduction of the proposal, industry representatives have assisted us in revising and updating our data base. Based upon this new information, we are recommending that certain provisions of the waste management tax be modified. The following is a description of the revised Administration proposal.

The Administration proposal would impose an excise tax on the management of hazardous waste at a waste management unit subject to permit requirements under the Resource Conservation and Recovery Act ("RCRA"), effective October 1, 1985. The tax would be imposed on a wet weight basis on the receipt at a permitted waste management unit of any waste identified or listed under section 3001 of the Solid Waste Disposal Act as of the date of enactment. Wastes subsequently identified or listed as hazardous would not be subject to the tax, absent Congressional action. The tax also would be imposed on the ocean disposal of hazardous waste and on the transport of hazardous waste from the United States on or after October 1, 1985. The owner or operator of the permitted waste management unit or the exporter of the hazardous waste would be liable for the tax.

The tax would be assessed on the receipt of hazardous waste at a waste management unit subject to permit requirements under Subtitle C of the Solid Waste Disposal Act. The tax rates imposed would vary depending upon how the waste is managed. Hazardous waste received at waste water facilities would be taxed at a rate of 25 cents/ton over the reauthorization period; hazardous waste received at injection well facilities would be taxed at a rate of $5.00/ton over the reauthorization period; hazardous waste received at landfills, surface impoundments (other than impoundments contained in waste water or deep well injection facilities), waste piles, or land treatment units would be taxed at an initial rate of $35/ton, increasing to $40/ton over the five year reauthorization period; and hazardous waste received at all other permitted units would be taxed at an initial rate of $6.00/ton, increasing to $7.80/ton over the reauthorization period. The bill contains a formula for adjusting the scheduled rates beginning October 1, 1987 if amounts credited or appropriated to the Superfund for preceding fiscal years fall below projected revenues for the period. The authority to collect taxes would terminate when the sum of the amounts credited or appropriated to the Superfund during the reauthorization period total $5.3 billion. To ensure against subjecting the same volume of waste to multiple taxes, a credit would be provided for taxes paid with respect to hazardous wastes that are transferred from one permitted waste management unit to another.

The tax would not be imposed with respect to hazardous wastes that are not managed in permitted waste management units, to certain wastes generated prior to the date of enactment that are received at permitted waste management units from CERCLA required removal or remedial actions or from RCRA corrective actions, or to wastes generated by Federal facilities.

The provisions of CERCLA that establish the Post-Closure Liability Trust Fund would be repealed by H.R. 1342 effective October 1, 1985, and the Post-Closure Liability Trust Fund would be terminated as of that date. Liability for certain damages from the release or threatened release of hazardous waste from waste sites after their closure therefore would remain with the responsible parties for such facilities. Taxes already collected from owners and operators of qualified hazardous waste disposal facilities under Code section 4681 would be transferred to the Superfund.

In summary, under the Administration proposal the Superfund would be funded by revenues generated by the existing excise taxes on crude oil, imported petroleum products, and feedstock chemicals, and by an excise tax on the management of hazardous waste.

DISCUSSION

Maintenance of the current feedstock taxes

The Administration proposal would extend through September 30, 1990 the current excise taxes on crude oil, imported petroleum products, and 42 listed chemicals sold or used by the manufacturer, producer, or importer of chemicals. The feedstock taxes enacted by CERCLA reflect the policy decision that Federal Government action had taken to clean up and contain spills or threatened or actual releases of hazardous substances, and the payment of damage claims when responsible parties are not known should be funded by the producers and users of hazardous substances rather than by the general public. The feedstock taxes have been criticized on the grounds that the tax collected from any individual firm is not based upon that firm's actual experience with hazardous substances and provides at best a form of rough justice. While these criticisms are not without merit, the taxes were imposed in recognition of the fact that there are present and future environmental costs associated with the use of hazardous substances. Prior to the enactment of CERCLA, however, these costs were not reflected in the price of the products made from such substances. By taxing the basic building materials used to make hazardous products and waste, these costs are borne by those persons utilizing hazardous materials.

Moreover, the taxed chemicals or derivative products of those chemicals appear in the response sites now being investigated by EPA. A nexus thus exists between the manufacture or use of the taxed chemicals and Superfund expenditures. It has been suggested that the list of chemicals subject to tax should be expanded to include other chemicals that have appeared in EPA response sites. We do not favor that approach. New sources of funds to support the Superfund should come, if possible, from taxes on the very substances that pose a threat to human health and the environment. We believe the waste management tax authorized in the Administration proposal would be more efficient than the feedstock taxes in taxing directly those persons that create hazardous wastes.

Finally, the feedstock taxes provide a stable source of revenue for the Superfund. Currently, revenues from these taxes total approximately $300 million per year. The Internal Revenue Service has not encountered substantial difficulties in administering the feedstock taxes.

Waste management tax

The Administration proposal would impose a tax on the receipt of hazardous waste at a unit subject to RCRA permit requirements that treats, stores, or disposes of the waste. We estimate that this tax would raise approximately $600 million per year.

The waste management tax would be paid by the industries that generate the hazardous waste believed to be responsible for many of the existing Superfund sites. Because a closer nexus exists between the generation of hazardous waste and Superfund spending than between the use or production of feedstock chemicals and Superfund spending, this tax more appropriately allocates the environmental costs associated with the use or production of hazardous substances. Data we have received from various industries indicates that the waste management tax would be borne to a large extent by the same taxpayers who currently pay the feedstock taxes. The tax would expand somewhat the number of taxpayers who are funding the Superfund, however, as it would be imposed on a number of taxpayers that are not subject to the feedstock taxes.

Other legislative proposals for the reauthorization Superfund would tax the general public by appropriating funds from general revenues or tax businesses whose practices may have no connection to the problems that Superfund addresses. These broad based taxes have the support of those industries that are subject to the feedstock taxes and those that are expected to pay the waste management tax. We understand the interest these industries have in urging Congress to enact a broad based tax. We, however, support the Congressional decision made at the time of the enactment of CERCLA to fund Superfund expenditures by imposing the environmental costs of using hazardous substances on the industry segment that uses or produces such substances. The Administration proposal, therefore, relies upon the waste management tax as the principal funding source for Superfund while maintaining the existing feedstock taxes.

The waste management tax, by taxing the treatment, storage, and disposal of hazardous waste, is consistent with the EPA regulatory program. The regulation of the treatment of hazardous waste, as well as the regulation of disposal and storage of hazardous waste, under the Solid Waste Disposal Act, reflects the Congressional determination that there are risks associated with the management of hazardous waste. Under the proposed waste management tax, the lowest tax rates are imposed upon waste water treatment and deep well injection. Each of those waste management techniques involves the use of large volumes of water; the lower rates reflect the dilute concentrations of hazardous waste commonly associated with such management techniques. Higher rates are imposed upon the management of concentrated wastes. The highest rate is imposed on the treatment, storage, or disposal of concentrated hazardous waste in or on the land, that is, in landfills, waste piles, land treatment units, and surface impoundments (other than those contained within waste water or deep well injection facilities).

The tax would be based upon the wet weight tonnage of a hazardous waste received at an interim status or permitted waste management unit and collected from the owner or operator of the waste management unit. Measuring the tax by reference to wet weight tonnage, as opposed to dry weight tonnage, has several advantages. From an environmental standpoint, the wet weight approach is more consistent with the EPA regulatory program and the Congressional decision to encourage taxpayers to reduce the volumes of hazardous waste. A dry weight approach also would ignore the fact that many wastes are extremely toxic at low concentrations. Finally, the wet weight approach will be significantly easier to administer.

At present, there are approximately 5,000 facilities with permitted units. Due to the relatively small number of potential taxpayers, we believe this tax could be administered without difficulty. The Internal Revenue Service has estimated that the cost of implementing the tax would not exceed $100,000.

Superfund expenditures during the reauthorization period would be committed based upon amounts projected to be credited or appropriated to the Superfund during each fiscal year. To assure that funds are available as needed, the bill permits EPA to borrow from other Federal sources if revenues fall below projected levels and sets forth a detailed formula based upon actual receipts for adjusting the waste management tax rates beginning in October of 1987 to make up any such shortfall.

In summary, the Administration proposal would provide principal funding for a five-year, $5.3 billion Superfund by imposing a tax on a wet weight basis on the management of hazardous wastes in interim status or permitted units. Additional funding would be obtained from the maintenance of the existing level of excise taxes on crude oil, imported petroleum products, and currently listed feedstock chemicals.

This concludes my prepared remarks on the provisions of H.R. 1342. I would be happy to respond to your questions.

Mr. DOWNEY. Mr. Thomas, last year, the House passed 323 to 33 a bill that would have provided $10.1 billion for Superfund. If we do the same amount this year, will you be able to spend that money appropriately?

Mr. THOMAS. Mr. Downey, I do not feel like we can, with the current program—and by that, I mean not adding in additional authorities to do additional things, but the program that is focused on cleaning up hazardous waste and hazardous substance sites—use that amount of money, because I think it will drive a pace of the program that exceeds our ability to manage because of a variety of constraints which we can talk about. I think that is where my concern comes, and that is why we recommended our estimate of approximately $5.3 billion.

Mr. DOWNEY. We are not here arguing—and I am not trying to put words in your mouth—the scope of this problem. I think we all pretty much agree with the things the GAO and the OTA have said and, that this is an enormous problem.

Your concern is about pace, and I want to talk about that for a few minutes, because Mr. Florio, who preceded you pointed out a number of things that I would like to hear you address. Given the way the program has proceeded in the past—and I might say that, at least from my observation, I want to give you some credit for moving this program faster in the last 2 years—you could spend $9.8 billion, which is some $300 million short, based on the increase of personnel, the fact that the Superfund would provide you more money.

Do you dispute his analysis with respect to the increased pace over time?

Mr. THOMAS. No, I do not. I looked at it in the context of a hearing I was having one day before his subcommittee where he laid it out, and I do not think the analysis he has done relates to the next

5 years directly, in that it primarily looked at the increased level of obligations over the last several years of funding. It does not really relate to the components of the program which I was addressing and our pace—and let me explain what I mean by that.

Mr. DOWNEY. Surely.

Mr. THOMAS. First, when you initiate the engineering study at a site, then you initiate the design, then you initiate the construction. That process takes approximately 2½ years from the time you start until the time you are actually obligating money for the construction phase. So the level of activity can increase fairly dramatically, as far as new site starts are concerned; you really begin to pick up heavy money as you get to construction.

Well, over the last 2 years, we not only increased fairly dramatically the number of new starts we also were beginning to pick up the construction phase on projects that had begun before, so your level of obligation went up significantly—mostly because we were picking up the end of the pipeline on the projects that had been started in the first 2 years, but also because we initiated rapidly a number of new projects during the last 2 years, far more extensive than probably had been anticipated in the first 2 years of the program. You cannot take that level of obligation and just run it out for the next 5. What you have to do is look at how many projects can you manage, at what phase they are in, effectively and efficiently, and that is why I was suggesting that you look at the emergency phase of the program and the long-term phase of the program. And we have come to what we think is an appropriately managed level of the program.

Mr. DOWNEY. Considering what you have just said, Mr. Florio has asked the CRS to do a study with respect to the expanding of Superfund with labs, contractors, and other qualified personnel. Have you had an opportunity to look at that study?

Mr. THOMAS. I have.

Mr. DOWNEY. Do you have any disagreements with the conclusions that they reach?

Mr. THOMAS. Not really. The only problem is I do not think they went far enough. I think the constraints really fall into three categories as far as how fast you can run this program. The first is management, and I talked a good bit about that, and that is there are only so many of these projects that you can manage simultaneously and expect good decisions and well-managed programs, and I really think we are reaching the saturation point. I have got major problems with burnout, I have got major problems with just how many of these big complex projects you can run simultaneously. So the management issue is a critical issue.

Second, you have got technical problems, as was pointed out by your Office of Technology Assessment, major problems in trying to push to permanent solutions when your technology has not given you permanent solutions in some of these cases. You cannot force that process. We are developing new technology. We cannot force through to conclusion technology that is not there. They recommended to you that you move aggressively with the Emergency Removal Stabilization Program but move more slowly with the long-term cleanup. That is what I am suggesting as well.

And the third level of constraint is what I would term personnel, which is kind of the area that that report was really getting to, and that is we do have problems with personnel. We have problems with turnover, burnout problems, the fact that private industry pays more than we pay, the fact that it takes time for a new engineer to reach the level of training where he can manage a problem. And, frankly, we have constraints on the number of hydrogeologists there are out there to deal with the ground water issue as we are trying to deal with it.

So, management, technology and personnel are the three areas of constraint. That report really only addressed what I would call personnel and administrative constraints.

Mr. DOWNEY. My time has run out. But I think it is fair to say that members of this committee—I am not yet sure a majority—will come up with a higher level. And we would certainly want to work with you, because I understand and appreciate the fact that there are people who are working very hard in your agency very thoughtfully. We just want more done. I consider this to be a national priority. If a foreign power had dumped these chemicals around here, we would spare no effort to clean them up, and I think that that is one of the ways we have to look at it, and I appreciate your problem very much.

Hopefully, I will get some more time to ask some more questions.

Mr. THOMAS. Mr. Chairman, just one final point. In addition to the reports you referenced, I would reference two other reports—the Office of Technology Assessment report, which I mentioned, which I think is an important one, that deals with pace; and also, your Appropriations Committee's Oversight Subcommittee did a thorough review and also made a report to your Appropriations Committee which basically recommended a level of about $1 billion a year—pretty well consistent with our recommendation.

Mr. DOWNEY. Without objection, we will put those reports in, too. Mr. Duncan.

Mr. DUNCAN. Thank you, Mr. Chairman.

I want to thank the panel. I would like to ask Treasury why would your funding proposal delete the general revenue? Last year, you said general revenues were a good proposal.

Mr. ROLLYSON. The existing Superfund has an appropriation of about 12 percent from general revenues, which is about a $44 million per year component. We have not proposed any increase, or any funding, from the general revenues. I do not think we would strongly oppose the maintenance of the existing level of $44 million per year. But we do not think that this is the time to expand to any degree the portion of the Superfund that comes from general revenue.

Mr. DUNCAN. Is that because of deficit considerations?

Mr. ROLLYSON. That is correct, and we do not believe that this is the time for any additional spending which would increase the deficit, or obviously, it is also not the time for any new broad-based taxes.

Mr. DUNCAN. Mr. Thomas, do you know of any chemicals that should be deleted to the list?

Mr. THOMAS. Mr. Duncan, we looked at the issue, and in one of our studies dealt directly with the issue of the feedstock chemicals, and our recommendation, after looking at the results of that study, as well as looking at the issues that the committee discussed earlier today concerning expansion or retraction of feedstock chemicals, was that the feedstock tax should remain as is. That is, the substances should remain, and the rates should remain as they have been for the last 5 years.

Mr. DUNCAN. You would not add or delete any?

Mr. THOMAS. We do not recommend adding or deleting any substances.

Mr. DUNCAN. I understand that some companies are having trouble obtaining insurance, even at the present rates. Is it possible that more of them would continue to have trouble if we increase the rate?

Are you familiar with that?

Mr. THOMAS. I am familiar with the issue of insurance, as it relates to hazardous waste——

Mr. DUNCAN. And that is their fund, as I understand it.

Mr. THOMAS. Pardon?

Mr. DUNCAN. I understand that the insurance is their fund.

Go ahead, sir.

Mr. THOMAS. Well, the issue of insurance and the problems with availability of insurance for environmental impairment liability is a major issue and one of great concern to us. I have met with representatives of the insurance industry. We participated in a hearing before the Senate Environment and Public Works Committee on insurance. We are working to try to see if there are provisions that could be incorporated in the statute or into guidance in our agency that would respond to some of the problems that the insurance industry has evidenced.

It is a major issue and a major concern of ours.

Mr. DUNCAN. Do you have any thoughts regarding whether an increase in the rates might cause plant shutdowns or loss of potential jobs? I know last year, we discussed it, and apparently, some of the proponents of the big increase seemed to care less about people losing their jobs.

Mr. THOMAS. We do feel that there is—and Mr. Rollyson can speak to it as well—a major problem related to increasing the rates on the feedstock tax. We do not think that that tax should be increased. We think it deals with a legitimate concern as far as the economy of that segment of the industry.

Mr. DUNCAN. If it went much higher, would there be some problem in competing for exports and imports, Mr. Rollyson?

Mr. ROLLYSON. Well, I think, Mr. Duncan, there is no doubt that any new tax has an adverse economic effect on whatever industry segment is subject to that tax. There is no doubt that increasing any taxes on the chemical industry will have an adverse effect at the margin with respect to their ability to compete in an international market.

Nevertheless, the EPA's section 301 studies and, I think, any other study, will demonstrate that the degree of anticompetitiveness, or the effect on competition from these taxes that we are suggesting be imposed, which would fall to a significant degree on the chemical industry, are really miniscule in comparison to the other international problems that are facing these and other segments of the industry—that is, the balance of trade, global economic situations, the ability of certain foreign countries to produce at a cost which is significantly below U.S. production cost of the raw materials, all far outweigh the adverse impacts of these taxes.

Mr. DUNCAN. Thank you very much, and thank you, Mr. Chairman.

Mr. DOWNEY. Thank you, Mr. Duncan.

Mr. Matsui.

Mr. MATSUI. Thank you, Mr. Chairman. I will be very short.

I would like to ask Mr. Rollyson, how is the waste management tax going to be administered, and what is the additional redtape that will be involved in that process?

Mr. ROLLYSON. It would be very little additional redtape, Mr. Matsui. One of the advantages of the waste management tax that we have now recommended, and we have put a lot of time into studying the best way to tax the disposal and management of hazardous waste during the last year, was to tie it directly to the existing EPA RCRA system. That is why our bill proposes only to tax waste that arrives at a permitted RCRA facility. Those are already subject to regulation; there will be no new facilities that are brought in. There are only about 5,000 such facilities currently in existence. So the additional administrative burden on this system, where we are taxing all waste received at these units, would be relatively modest.

Mr. MATSUI. And these sites basically only have chemical wastes that are deemed hazardous, right—they do not have any other kind of waste——

Mr. ROLLYSON. We would only be taxing those wastes which are listed as hazardous waste. I would have to defer to Mr. Thomas as to whether or not they receive any other types of waste.

Mr. THOMAS. They certainly would have solid waste, I am sure, at those facilities, but the regulatory program that we are tying our tax to is only that related to the hazardous waste.

Mr. MATSUI. I yield to the chairman. He has additional questions.

Mr. DOWNEY. I thank the gentleman for yielding.

Mr. Rollyson, let me ask you a question.

Would a broad-based corporate receipts tax be consistent with the goals of fundamental tax reform, including the ones that are under consideration by the Treasury now, on marginal rates on corporations and individuals?

Mr. ROLLYSON. Well, it would depend upon what type of broad-based corporate tax you are talking about. If we are talking about the imposition of a new broad-based corporate tax which increases the net tax receipts in the economy, I think the answer to that is no. Our current tax reform proposal is examining and trying to broaden the tax base both with respect to individuals and corporate taxpayers, but doing so in the context of a revenue-neutral package, so that there will not be any new net taxes involved.

Mr. DOWNEY. Can you help me out, then? Can you give me some idea of what sort of broad-based corporate tax would be consistent with the tax reform proposal?

You have just told me what is not—can you tell me what is?

Mr. ROLLYSON. Well, hopefully, we will be releasing our package in the very near future.

Mr. **Downey**. I know. I do not want to get a sneak preview on that. I would not ask you to do that.

Mr. **Rollyson**. But you would like one.

Mr. **Downey**. We certainly would in New York.

What I would like to know is that you have heard in the course of listening to my colleagues talk about this, Mr. Crane and others, that look, you cannot really identify the fact that some people dumped, and some people did not, and yet you penalize them as people who make the feedstocks, and after all, if this is a national problem, why don't we address it with a national tax?

You have already said that you believe, and Mr. Thomas does, that the feedstock tax is a good one.

Mr. **Rollyson**. Right.

Mr. **Downey**. Is there anything that you can think of now—and I am going to ask you again to reflect on this later—of any sort of broad-based tax that could be designed to fit within the goals of the administration's proposal?

Mr. **Rollyson**. Well, let me try to answer what I think you are getting at. I do not want to suggest that from a purely tax policy perspective that a broad-based tax would be inconsistent or would be an irrational way to fund the Superfund.

I think you are right, this is a national problem that affects all taxpayers. We do not know who has caused some of the Superfund sites that we are now cleaning up, but it is a public problem. And therefore, there is a rational basis for funding this from general revenues.

The problem is that right now is not the appropriate time, and the President has been adamant in his statements to the effect that now is not the time to increase the deficit by additional funding from general revenues, nor is this the time to impose on the economy new net taxes.

Mr. **Downey**. Mr. Thomas, let me ask you again to clarify, at least for the members who are here and at least for my own mind—you agree that a feedstock tax is the appropriate way, given the same level of financing this Superfund; how do you answer Mr. Crane's objection that there is not a connection, or Mr. Gregg's objection, between the people who are producing the feedstocks and the polluters?

Mr. **Thomas**. Well, Mr. Downey, I think that the issue that there is not a connection in terms of the current site we are cleaning up and the current people who are paying the tax may well be true. You gave us enforcement authorities to try to use in lieu of using that fund, and we do that. So if we can identify the current people who have contributed to the site we are cleaning up, we go against them to clean up a site, just as Mr. Crane indicated.

However, I do think there is a connection—and there are a number of sites where we cannot identify the parties—I do think there is a connection between the feedstock chemicals and what we find at the sites, as far as a track back to those feedstocks. We found a fairly good correlation; about 75 percent of what we find at the sites can be tracked back to the feedstocks that we tax.

Additionally, I think there is a correlation generally between the people who are making the feedstocks now and the people who made feedstocks when these wastes were generated—not that they necessarily disposed of the feedstocks, but that those who did dispose of the waste, disposed of wastes that were derived from feedstocks.

So I think there is that general connection. Certainly, it is a broad one. We do feel there are equity problems with that tax. We do feel there are economic problems if the tax is expanded. That is why, when we looked at the various options that we felt were appropriate in coming to grips with revenue with Treasury, we felt an expansion of the base for tax, maintaining the nexus, and even heightening the nexus between the waste and the problem was appropriate, and we came forward with a waste management tax. But we do feel the nexus is there. We do feel that it is an appropriate way to raise that $300 million a year approximately that we have been raising from feedstock.

Mr. **Downey**. Thank you.

Mr. Moore.

Mr. **Moore**. Thank you, Mr. Chairman.

Again, for the record, I appreciate both your testimonies. Do you both agree, Treasury and EPA, that increasing by any order of magnitude the feedstock tax would cause economic difficulties for those industries?

Mr. **Rollyson**. Well, let me respond to that, Mr. Moore. I think that one must recognize that the waste management tax that we are proposing will to some degree—to some significant degree—fall upon the same taxpayers who are currently paying the feedstock tax, and we have taken that into account, and we have met with industry on any number of occasions to try to discern exactly what the level of economic impact would be on these taxpayers. And we have, pursuant to those meetings, adjusted significantly some of the rates of tax that we have proposed with respect to the different disposal techniques.

We have proposed that the feedstock tax not be changed at all, and that the waste management tax be the principal funding source, because although there is, we think, a rational nexus between the feedstock tax and the Superfund cleanup responsibilities, there is a better nexus, I think, between those who are directly using those hazardous wastes. Therefore, we think there is a better nexus for the waste management tax.

For that reason, we are really proposing that the principal funding source be from waste management, leaving the feedstock tax as it is. And I think we are cognizant of the economic impact on the industry, but we think that it is a manageable burden that is being placed upon them.

Mr. **Thomas**. Mr. Moore, I would only add to that that in addition to the points Mr. Rollyson made, we also took into account the equity issue as we looked at revenue sources, and we feel that the waste management tax does broaden significantly the body of taxpayers; in addition to a tighter nexus, it does broaden significantly the body of taxpayers that would be contributing to this fund.

Mr. **Moore**. Following the line of questioning of our chairman this morning, should this committee decide to increase the Superfund to a larger figure than you have testified this morning; is it your opinion that we would have to look for another taxing source to make up that increase?

Mr. ROLLYSON. I think it would be difficult to increase the funds that would be derived from the waste management tax. There are obviously those who have——

Mr. MOORE. And a feedstock tax.

Mr. ROLLYSON. Well, there are those who have proposed increasing the feedstock tax. We would not propose that. I think if the choice came down to increasing the feedstock tax or imposing a new broad-based tax, we would prefer seeing the feedstock tax increased. But we do not want to see either tax increased. We think the $5.3 billion fund is the right level.

Mr. MOORE. You were doing fine until that last caveat. [Laughter.]

What is your opposition to some sort of broad-based tax if this committee approves more funds than the administration has said it thinks is necessary. I am of the opinion that you are probably right on the waste-end tax, in the sense that it is probably pushed about as far as it can be pushed. But in the sense that you are bringing new taxpayers into that tax, I certainly do not think we ought to be pushing the feedstock tax any further either, and so if we need additional funds, you would object to going to the general treasury, obviously, under OMB's restrictions, so it looks like to me it leaves you with looking for a new tax.

And what would be wrong with some kind of broad-based tax?

Mr. ROLLYSON. I think the President has made perfectly clear that he does not think that this is the time for any new broad-based taxes to be imposed upon the public and particularly to be imposed to fund the Superfund when those taxpayers have no nexus whatsoever to the problem that is being sought——

Mr. MOORE. I understand that. But assuming that the Congress says the fund is going to be bigger, somebody is going to pay it. And so the question is, do you penalize further those people in the industry, or do you find some more equitable way of raising the money. That is what I am trying to ask of you. I know where the party line is here, that you do not need any more money than that. But assuming the Congress disagrees, we need some guidance on this Committee about where it might come from.

Mr. ROLLYSON. Again, all I can tell you is we would, I think, prefer to see the feedstock tax increased, which would come out of the petroleum products and feedstock chemicals, rather than see a new broad-based tax.

Mr. MOORE. Why would you say that?

Mr. ROLLYSON. Because first of all, we do not think the additional funds are necessary. Therefore, we would certainly——

Mr. MOORE. Put that aside. That is circuitous, and it does not make sense.

Mr. ROLLYSON. But when you ask why, I have to respond that that is why we do not think the funds are needed.

Mr. MOORE. No, but that is not why you would choose a feedstock over a broad based.

Mr. ROLLYSON. Well, if you are going to impose a tax that we really do not think is necessary to support the program, we think it ought to come out of the pockets of those people who are more directly responsible for the problem.

Mr. **Moore**. But now, almost every business and industry produces, has something to do with producing a toxic waste; and the people who are drilling the oil and producing it, they have no control of what is finally done with that product way down the line.

Mr. **Rollyson**. I think that by and large, the service industries are not producing any significant quantities of hazardous waste.

Mr. **Moore**. They use cleaning fluids. That is toxic waste when it is stored, when it is spent.

Mr. **Downey**. As much as I am enjoying this, I think we have to move on to the next questioner.

Mr. **Moore**. I thank the Chairman.

Mr. **Downey**. Mr. Gephardt.

Mr. **Gephardt**. Thank you, Mr. Chairman.

Mr. Thomas, I have read and listened to your testimony about what you think you need to spend. My first question is do you feel confident, given the experience you have had at sites like the one we have worked so hard on in Missouri—and I do realize that you have worked hard to try to deal with situations like the one we have in Missouri—do you feel absolutely confident about your figures? In other words, are you finding that your estimates are working out when you are actually moving into sites? And I would cite the anecdotal evidence of our experience in Missouri of finally getting down to doing it, and finding that the project may be more immense or difficult than we thought.

Mr. **Thomas**. Mr. Gephardt, that really is a good question and gets right at the heart, I think, of our costing figures. And as you probably know, we have increased our estimates several times over the last couple of years, even as to per site cost.

I do have confidence in what we have projected as far as site costs are concerned—the $8.1 million, for instance, I used. But let me say that that is based on a fairly limited sample as far as the construction program is concerned, because we are moving into more and more construction sites every day. It could go up, it could go down. There are reasons to think it could go down—for instance, one reason is that we began to deal with the worst sites first. As we move into the lesser sites, the cost would go down. It could go down as we improve our management effectiveness and as we try to obtain some more consistency in our engineering studies.

It could go up because, as we develop a broader sample, we find that it is going to cost us more at construction than we had thought. It could go up because disposal costs might be more. There are any number of factors that could force it one way or the other.

I have taken the experience we have had to date and costed it out for the future, and I feel those are the figures that are reliable, and they are certainly the best figures I have to date.

Mr. **Gephardt**. Would either of you not agree that if Congress decides that we want to put more money in the fund as we did last year, when we passed a bill on this side, that if there is an underestimate, the additional money could be used for that, and if there is not an underestimate, if you are correct in your figures, that we would simply have a fund that would be built to a greater level than needed, as we have done in the Airway Trust Fund and the Highway Trust Fund, to some extent, and that that would have a positive impact on the deficit, it would earn interest, and it would be there when a reassessment comes 3 or 4 years down the road.

Mr. ROLLYSON. I do not really see the need or the real rationale for overfunding to protect against cost estimates. I think we have provided—there are two questions, I guess, involved, and I can respond to one of them. One is whether the costing estimates are proper, and that, Treasury cannot speak to; I would have to leave that to EPA. The other is are the revenue projections firm, and will we in fact collect the revenues that will be needed, assuming that the cost estimates are accurate.

We have built into this proposal an automatic adjustment mechanism which would increase the rates of tax if in fact the collections fell below the projected levels of collections. So that if in fact, for some reason, we do not meet the projections, then beginning in 1987, the rates would be tuned up so that in subsequent periods, we would make up the shortfall, and the bill also provides for an internal and intervening borrowing provision so that the funds could be borrowed until those additional revenues were collected.

Mr. GEPHARDT. I would simply end by perhaps making a statement that my sense of what is happening in the committee and in the Congress—and I could be wrong—but my sense is that there is a continuing and perhaps even a growing sentiment to err on the side of funding at a higher level. I do not really believe there is going to be a sentiment in the House to go below the level we passed last year. And second, there may be a continuing disagreement over how to get to that level. I think there obviously are some that want to go to a broader-based tax for part of this revenue. And I do not know how that would come out, but the one thing I feel clearly is that there is not a desire to backtrack in terms of the amount that would come out of the House.

Thank you.

Mr. DOWNEY. Thank you, Mr. Gephardt.

Mr. Moore.

Mr. MOORE. Mr. Chairman, thank you. I have some questions here, getting into the tax structure testimony by Treasury, and I would like to submit these questions for the record and have them do a written response. It should not be that complicated, so I would like to ask them to do it within 2 weeks.

Mr. DOWNEY. Without objection, it is so ordered.

Mr. MOORE. Thank you.

[The questions and answers follow:]

RESPONSES TO QUESTIONS FROM REPRESENTATIVE W. HENSON MOORE ADDRESSED TO MIKEL M. ROLLYSON, TAX LEGISLATIVE COUNSEL, DEPARTMENT OF THE TREASURY

1. In devising a taxing structure for the Superfund, did you give any thought to any of the new corporate taxes currently being considered on the Senate side?

We considered numerous funding mechanisms, including broad based taxes, in developing the Administration's proposal.

Do you support any of these proposals?

No, we do not support any of the broad based tax proposals that have been introduced in the Senate as a means of financing the Superfund. We support the Congressional decision made at the time of the enactment of CERCLA to pay for Superfund expenditures by imposing the environmental costs of using hazardous substances on the industry segment that uses or produces such substances. The Administration proposal, therefore, relies upon a new waste management tax as the principal funding source for Superfund, while maintaining the existing feedstock taxes.

2. What about a tax on corporate net receipts, that is, a tax on gross receipts less cost of goods sold.

Would some companies operating at a loss still be subject to a substantial tax?

Yes, since some business expenses are not included in the calculation of most cost of goods sold. Some companies with net receipts and no taxable income would be subject to this tax.

Would a company selling successful high technology products tend to be taxed at a higher rate than older more established industries, even though they both make the same bottom line profits?

That is hard to answer as a general proposition. Certainly tax liability would be unrelated to profitability. Moreover, businesses that would appear to do very little environmental damage would be required to pay the tax. For example, a large percentage of a net receipts tax would be paid by non-industrial corporations, in particular by firms in wholesale and retail trade such as companies selling high technology products.

Is there any reason to limit this tax to corporations?

No. Unincorporated businesses also may use or produce hazardous substances.

If it is limited to corporations with net receipts of more than 50 million, how many taxpayers would there be?

Approximately 900,000 companies would be subject to tax.

Would similarly situated taxpayers pay a different tax because of their method of accounting for cost-of-goods-sold?

Yes. Because the tax laws provide some flexibility in computing net receipts, companies would be encouraged to change their method of accounting in order to include additional expenses, such as depreciation, in cost of goods sold to reduce their tax liability.

How many of those potential taxpayers would you expect to request a change in method of accounting of cost of goods sold? In light of the recent backlog at the IRS, how much more money would we have to put into the IRS budget to get the requests for changes in accounting processed?

It is impossible to estimate the number of taxpayers who would request a change in method of accounting if a tax were imposed on corporate net receipts. Taxpayers would evaluate their method of valuing inventories and may request a change if such change could reduce the tax burden. In any event, the Internal Revenue Service could expect an increase in requests for changes in accounting method which would necessitate a corresponding increase in staffing and support services if any additional backlog of taxpayer requests were to be avoided.

Could you train the personnel in time? What kinds of issues would an IRS examiner have to consider before the change in method of accounting is granted?

Taxpayers must generally request a change in accounting method within 180 days from the first day of the year of change. Depending upon the number of requests for change, the Internal Revenue Service could have some difficulty providing a timely response to the requested changes.

3. If a new tax on corporations were limited to manufacturers, how would you define the term "manufacturer"? Would this require companies to separately account for the various activities within the same business?

Because large companies may conduct numerous activities within the same corporate structure, it would be difficult to define explicitly the term "manufacturer". One corporation could be involved in manufacturing, wholesale, retail, and service businesses. In such case, if tax were imposed only on income derived from manufacturing activity, the corporation would be required to separately account for income from that specific line of business activity.

4. Regarding the MEET Proposal, or value added tax proposed by CMA and API, that would tax gross receipts less direct material expenses relating to those sales—would the IRS be required to audit the allocation of expenses to each sale?

There may be some question as to whether a particular category of expenses is related to income from a given sales activity. More importantly, a manufacturers level tax would create valuation problems for tax administrators. This is because manufacturers do not sell exclusively to wholesalers. Some manufacturers also engage in wholesale and retail activities, perhaps even selling directly to final consumers. In such a case it would be unfair, as well as create competitive imbalance, to simply apply the tax to the price charged by the manufacturer. Adjustments must be made in these cases to reduce the manufacturers price to reflect the fact that it is engaged in wholesale and/or retail activity. This may involve the need to determine an "arm's-length" price for intercompany pricing purposes.

Canada, which has a manufacturers sales tax, has found it necessary to rely on an extensive set of rules and regulations involving discounts, notional values, and deemed sales to branches to solve this problem.

Changes in the tax rate also would require the Internal Revenue Service to permit adjustments with regard to tax-paid inventories of manufacturers. Otherwise, manufacturers would incur either windfall losses or gains with respect to those inventories.

How much would it cost to adequately administer this tax?

The Internal Revenue Service has estimated that it would cost approximately $5.1 million per year to administer the manufacturers value added tax.

Would this tax impose a greater burden on firms and industries that must pay large transportation costs for raw materials?

Yes, if transport costs are included in the tax base, manufacturers would be given an incentive to locate near their source of supply for materials and other inputs.

Could a company operating at a substantial loss end up paying a lot of tax?

Yes. The base of the tax is value added, roughly equal to wages, rents, and profits. Thus, a firm not making any profit would be required to pay tax.

Would a high technology company selling a successful product tend to pay a higher tax than an established low margin industry?

Goods with most of their value added prior to the manufacturing sale would bear a heavier tax than those goods with most of their value being added to post-manufacturing activities.

5. What about a tax on corporate earnings and profits, is E&P an adequately defined term in the Internal Revenue Code?

The term earnings and profits has been in the tax laws since the Revenue Act of 1916. However, there is no legislative history which shows what Congress meant by the term earnings and profits. In 1975, the Internal Revenue Service published Rev. Proc. 75-17, 1975-1 C.B. 677. While not defining earnings and profits, the pronouncement does give instructions and guidelines relating to corporate distributions and the determination of earnings and profits in order to provide corporations and their stockholders more certainly as to the taxable status of distributions.

Is there any reason to limit this approach to a tax on corporations?

No. Unincorporated businesses also may use or produce hazardous substances.

If it is limited to corporations with annual E&P over 100,000, how many taxpayers would there be?

We cannot estimate the number from tax return information because taxpayers are not required to report earning and profits.

Do companies currently compute E&P on an annual basis?

Most do not.

Would it be much of a burden on taxpayers to compute E&P?

Such a requirement would impose an additional compliance problem on taxpayers that do not currently compute their earnings and profits annually.

6. If Congress decides to completely fund Superfund with a single new tax on businesses, what would you recommend?

We do not favor funding the Superfund completely with a single new tax on business. The feedstock taxes and the waste management tax are consistent with the objective of maintaining a reasonably close relationship between the taxpayers who pay Superfund taxes and the taxpayers who produce or use hazardous substances. Revenue from these two taxes would be sufficient to fund the Superfund at the $5.3 billion level recommended by the Administration. A single new broad based tax is unsound tax policy. It would open the door to the likelihood of higher Federal taxes, something the Administration opposes. Congress should not be looking for a new broad based tax each time a spending "need" arises. Rather, it should determine how spending priorities can be satisfied out of available revenues.

Mr. DOWNEY. Mr. Gregg.

Mr. GREGG. Could you tell us, Mr. Thomas, whether or not the $800 million which is projected in your figures and which Mr. Florio is so suspicious of, whether that is a hard figure for recovery and that we can count on that sort of dollar figure?

Mr. THOMAS. Mr. Gregg, we think it is. As a matter of fact, we think it is a conservative figure. Let me indicate that from recoveries we are projecting $477 million over the 5 years; from interest, we are projecting $337 million. The interest, we think, is certainly a hard figure. It is done by Treasury. They incorporate all appropriate estimates on what the interest would be.

The recoveries, the $477 million, are based on our projections of how many cases we will bring to court, very conservative estimates on how much money we think we will recover, based on the last 4 years. Now, the cost recovery program, and the reason it has been slow to get off the ground, is that you do not go to court to get your money back until you complete the cleanup. And we estimate it takes 1 to 2 years not only to get into court but then to get a settlement from court.

We have received about $12 million in recovery in 4 years. However, we have $125 million in litigation right now for recovery. We have projected the number of sites we will clean up, cases we will bring. My staff projects, using very conservative estimates, about $560 to $570 million in recoveries over the next 5 years. I scaled that back again and ended up with the $477 million.

Mr. GREGG. Thank you.

Mr. Moore's proposal on feedstocks significantly increases the amount that is raised from inorganics, and it keeps the feedstocks level by reducing the amount raised from organics. In light of your section 301(e) study, isn't it reasonable that we should be laying a heavier burden on inorganics?

Mr. THOMAS. Actually, I think that section 301 study misrepresents to a certain extent the inorganic/organic tradeoffs because of not only measuring inorganics, but then measuring tracebacks. So actually, it was looking at frequency at sites only.

If you eliminated what is more of a double counting measure in that section 301 study—and I can give you some detail on this in writing, if you would like it—it comes out at pretty well the same ratios that we have got in the current feedstock.

We looked at that when we were looking at proposals and whether we should modify feedstock ratios or not, and we felt that it really was a misrepresentation, both the petroleum frequency as well as the organic/inorganic counting.

Mr. GREGG. If you could send us that in writing, I would appreciate it.

Mr. THOMAS. We would be glad to.

Mr. GREGG. Under your new proposal, you are going to reduce significantly the wet weight tax as it relates to treated materials. As I understand, that is 25 cents—is that what you said?

Mr. THOMAS. We set up a new category, the wastewater treatment category, which is 25 cents per ton.

Mr. GREGG. So you are sort of acknowledging that that is a cleaner waste, and that people are trying to improve the situation, and thus they should be getting some benefit, and they should not be hit with the same tax and people who are just dumping in a landfill; is that correct?

Mr. ROLLYSON. Well, it responds, I think, to a couple of points. After our initial proposal was on the table, we met with a number of industry representatives, taxpayers, who have very significant, very large wastewater treatment facilities. And I think the data that we were basing our original rates upon did not reflect the size and manner in which those wastewater treatment facilities were operated. And after having that additional information, it became clear that at the level of tax that we had proposed, it would simply impose a completely unmanageable burden on certain of those facilities.

And therefore, we have taken into account both that economic factor plus the factor that these are very highly dilute facilities—that is, the volume of water is very, very high; the concentration of hazardous waste is significantly lower than in other forms of treatment, and therefore, the combination of those factors compelled us to propose a lower rate.

Now, that does not say that there are still not significant environmental concerns with wastewater treatment facilities.

Mr. GREGG. Thank you.

Can you tell me, in setting up a new structure, would it be reasonable to relate the taxes to the toxicity of the pollutant or the environmental persistence of the chemical? Would that not be a logical way to approach this if it were possible?

Dr. SKINNER. I think it would be a very complex taxing scheme. Theoretically, it could be done, but then putting in the monitoring system to administer it probably would be very, very complex.

Mr. GREGG. Are we going to go around for another round?

Mr. DOWNEY. Yes, we will recognize you for another round—but not just now.

Mr. Thomas, let me ask you some questions about underground storage tanks, if we can.

Last year, EPA told this committee that there were almost 3 million of them, and I would like to know in light of the RCRA amendments if you can give us any information about how many of that 3 million you anticipate are leaking, or are problems for us.

Mr. THOMAS. Let me ask Dr. Skinner to respond to that. As you know, Mr. Downey, we have moved forward with the authorization that Congress gave us to establish an underground storage tank program, and we are in the midst of implementing that program, at the early stage of it. We are developing additional information as we go.

Dr. SKINNER. Yes, we are currently trying to develop a data system on exactly how many tanks are out there and the number that are leaking. Our estimates range from 2 million to 5 million tanks might be out there, of different types.

All we have in terms of the percentage leaking is examples in certain situations. We are doing a national survey right now, which will come up with a national figure in about a year.

In various locations, the leakage rates have been very, very high. As high as 20 or 30 percent of the tanks in the ground in a particular county have been found to be leaking.

Mr. DOWNEY. What are we proposing to do about this in terms of cleaning up these leaky tanks?

Mr. THOMAS. As you know, the authority you gave us does require us to establish an overall regulatory program for underground storage tanks, both chemical products and petroleum products are incorporated in that. We already have the authority for hazardous waste tanks, as you know, which we regulate. But the new authority is far broader than what we had previously as far as numbers of tanks, and it includes the authority to require cleanup if there is any detection of leakage from those tanks.

And we already have the authority, as I indicated, to regulate and require cleanup on the hazardous waste tanks. We also have the authority to deal with any chemical product leakage from an underground tank, either with the owner/operator or with the Superfund.

Mr. DOWNEY. The reason I ask you the question—I am very much concerned.

This problem was brought home in a most graphic way in my congressional district, with people who had had this problem for over 1 year, and I am frankly not satisfied—I wish EPA would have moved faster, but I understood the constraints on it—but I think that we need to do more in terms of how we are going to provide remedial action to these folks who are left waiting for the parties to determine who is liable and what will happen to them.

Ultimately in this instance, some of the people were moved, and homes were purchased, but the process of the almost 2 years' delay while they had to sit and smell benzene was really an unacceptable situation.

We have got legislation. I would appreciate it if you would review it. I know that Mr. Florio and his committee are going to do that as well.

Mr. Duncan.

Mr. DUNCAN. I have no further questions. Thank you.

Mr. DOWNEY. Mr. Gregg.

Mr. GREGG. Thank you, Mr. Chairman.

On the issue of the import duty, which is again in Mr. Moore's bill, the ad valorem, does the Treasury have any estimates on that, what sort of revenue we would generate from that?

Mr. ROLLYSON. No, we do not.

Mr. GREGG. Is there any way you could develop some estimates for us?

Mr. ROLLYSON. On the basis of the Moore proposal?

Mr. GREGG. Right.

Mr. ROLLYSON. We would have to see—yes, we can give you an estimate on what the Moore proposal would provide.

Mr. GREGG. I would appreciate that. Thank you.

Mr. ROLLYSON. I might add, if I might, Mr. Gregg, that I think one of the problems with any import tax on derivative products is that they do raise GATT problems, and I think that likely, although we will have to look at it in more detail, I think likely the Moore proposal does have a GATT problem, as do most of those proposals.

Mr. GREGG. Well, Mr. Moore testified—unfortunately, he is not here now—but he testified that he felt that he had avoided the GATT problem.

Mr. ROLLYSON. We will look into that as well.

Mr. GREGG. Mr. Thomas, can you tell us what you feel from a technical standpoint, the desirability of deep well injection is?

Mr. THOMAS. The desirability——

Mr. GREGG. As compared with treatment or landfills as a form of disposal?

Mr. THOMAS. We think deep well injection is a viable form of waste disposal, if done properly, and we have a regulatory program to ensure that it is done properly.

Mr. GREGG. Is there going to be any relationship in this disposal scheme, the wet-weight disposal scheme, for concentrations? Is there going to be any—is the tax going to reflect in any way the percentage of concentration of toxics within the materials that are being disposed?

Dr. SKINNER. Let me address that. I think in the tax rates that we have put together we do try and reflect the fact that certain practices deal with a higher percentage of solids than other practices. So, on the average, I think there is an attempt to deal with the concentration of materials.

Mr. GREGG. But it is in a very general way?

Dr. SKINNER. It is in a very general way, yes, sir.

Mr. GREGG. Is there any way that we could be more specific and not have it become overly complex?

Dr. SKINNER. We have not been able to think of one.

Mr. THOMAS. That clearly was an issue that we looked at over the last year. Last year, when we discussed the issue of waste-end taxes, we felt that there were any number of issues, and a major issue that we were concerned about was the administrative feasibility of implementing one. So we looked at various criteria, and there were tradeoffs. We felt that the proposal we came up with was a tax that would give us certain revenue. It had certain equities in it as far as the issues you have raised, but it also was a tax that we could administer, it was one that had administrative feasibility to it.

Mr. DOWNEY. Would the gentleman yield on that point?

Mr. GREGG. Yes—is this coming out of my time?

Mr. DOWNEY. No. I will get you more time, I promise.

Are you familiar with the Chemical Manufacturers Association proposal for measuring dry-weight hazardous waste?

Mr. THOMAS. Yes.

Mr. DOWNEY. What is your view as to the feasibility of that proposal?

Dr. SKINNER. Let me comment on that. The problem in measuring dry-weight—there are two problems. One is the test that you would use, and the second is how frequently you would have to apply that test in order to come up with a representative sample. We find that in many waste streams, the concentration of solids varies very considerably over time. It can vary by the hour. It can vary where you measure it in the device or in the lagoon.

So if you wanted to use a test to determine solids, you would have to take many, many samples, you would have to take them very frequently, and someone who would administer a tax based upon that would have to be a process engineer; they would have to know the chemical process very, very well.

The other side of the problem is the issue of what sort of techniques you use to actually measure the solids once you have resolved the frequency problem. And I have seen the Chemical Manufacturers proposal, and they do propose using certain techniques that we have developed. But it should be noted that the techniques that we developed were not developed for determining quantity of materials. The test for a liquid, for example, was developed to determine the presence of a liquid, not the amount of liquid, and it has never been verified for reproducibility. We do not know if you used it a number of different times what the error ratio would be.

Mr. HEFTEL [presiding]. Mr. Gregg, would you like to continue?

Mr. GREGG. Thank you.

Following up Mr. Downey's point, we have toxicological information for transportation and disposal of chemicals, don't we?

Dr. SKINNER. There is toxicological information on quite a few of the chemicals, yes.

Mr. GREGG. Is there enough so that we could set up a pattern as to the toxicity of various groupings, a fairly broad pattern relative to broad groups of chemicals?

Dr. SKINNER. I do not know if you can do it simply. You have to consider the toxicology of the material. You would have to consider the exposure due to the different systems that would be used to manage it. You would have to look at things like the population exposed.

It is not just a simple matter of the toxicity of the item that you are concerned about. You are concerned about how it would leak out of different types of systems and who would be exposed to it, and for what period of time.

That is the reason why we found it difficult to come up with a scheme, that you could administer, that would weigh all of those things together.

Mr. GREGG. Do you think you could sit down and try thinking about it again, and give us your thoughts on it?

Dr. SKINNER. We would certainly be willing to work with people who had some ideas on that to see if something could be developed.

Mr. GREGG. Just as an aside, and it really is a bit of an aside, but it raises a question which I am wondering about. Under your 238 emergency sites, which you consider to be a constant, and as I understand it, those are pretty much each year new sites that are added to the groupings. If you get 238 today and you are projecting 238 in 1990, you are saying essentially, that the 238 that you are going to find, these new sites to 1990—what are you saying? Are you saying they have not been found yet today, or, that they are actually going to be created between now and 1990?

Mr. THOMAS. No, they have not been found.

Mr. GREGG. They have not been found?

Mr. THOMAS. That is correct. We have a continuing identification and assessment program. Additionally, that not only is a cleanup effort, but a stabilization effort as well. So you will have some of that response, actually at the priority site stabilizing, but they have not been found.

Mr. GREGG. If these are emergency sites and require that sort of prompt response, what you are saying is, it is going to take us 5 years before we find even the most significant sites as far as emergency——

Mr. THOMAS. We have a very broad definition of emergency response. It is protection of public health and the environment, where there is a threat of a release. Now we will have a site that today, for instance, will not appear to present a potential threat. Two years from now, if we reassess that site, we may conclude that it presents a potential threat.

What we have done is, we have taken the authority you have given us, and we have interpreted it very broadly, so that any site that presents that potential threat will use that authority.

The 238 that I have estimated is based on the experience we had, say, during the last 18 months, where we think—where we try to respond very aggressively, a broad interpretation of our authority to every site out there.

Mr. GREGG. Thank you very much.

Mr. HEFTEL I thank you, gentlemen, and we will now call the next panel. Charles DiBona representing American Petroleum Institute. Robert Forney representing Chemical Manufacturers Association. Mr. Yost representing Synthetic Organic Chemical Manufacturers Association. Mr. Richard Seibert representing National Association of Manufacturers.

Was there any order in which you gentlemen wanted to testify?

Mr. DIBONA. No, we have not.

Mr. HEFTEL. For simplicity's sake, then, why don't we start from left to right with Mr. Seibert, and identify yourselves each time that you start, for the record, please.

STATEMENT OF H. RICHARD SEIBERT, JR., VICE PRESIDENT, RESOURCES AND TECHNOLOGY DEPARTMENT, NATIONAL ASSOCIATION OF MANUFACTURERS

Mr. SEIBERT. Thank you, Mr. Chairman. I ask that my statement be submitted in the record.

Mr. Chairman, I am Richard Seibert, vice president of the Resources and Technology Department of the National Association of Manufacturers.

NAM has a great interest and supports the reauthorization of Superfund. All Americans support the act's ultimate objective, the prompt and efficient cleanup of abandoned hazardous waste sites. In particular, we all agree that EPA must have the authority and capability to intervene immediately, and effectively to address imminent hazards to health, life, and property.

This authority and capability now exists under Superfund. On a timely and orderly basis, we will resolve the inherited legacies of orphan waste sites. At this juncture, Superfund can and should go out of business, provided that RCRA is effectively enforced. No new Superfund sites should be created.

Today, I would like to address two specific issues of concern to this committee, the size of the fund, and the proposed victim assistance demonstration program. On the basis of EPA's experience since 1980, and with virtually every other interested party, NAM supports a significant expansion of the funding of Superfund. The issue is the rate of growth.

EPA officials, including Administrator Thomas today, have repeatedly testified at length on the Agency's capability to rapidly expand Superfund activities.

EPA has also consistently sought substantially increased Superfund funding, and has just as consistently acknowledged, that there are limits to its ability to efficiently and intelligently manage rapid growth.

NAM shares EPA's concerns on these points, and supports the recommendation on funding level. NAM believes the Congress should resist the temptation of diluting Superfund energies and funds in initiatives not directly related to the cleanup of abandoned hazardous waste sites.

Specifically we are concerned about the so-called Victim Assistance Program incorporated in H.R. 2022 and S. 51 as reported from the Senate Environment and Public Works Committee.

These provisions would establish an entirely new, and potentially uncontrollable Federal program to provide medical insurance benefits and cover related costs to individuals who may have been exposed to a hazardous substance.

This is a matter of grave concern to NAM. The ensuing program, to be established under section 309 of H.R. 2022 would provide medical screening, examinations, tests, and if no symptoms have developed from the possible exposure, a medical benefits insurance policy would provide costs for medical screening, testing and examination.

If symptoms do develop, out of pocket medical costs are reimbursed. Group medical benefits, hospitalization, medical and surgical insurance benefits would also be provided.

NAM believes that this proposal is unwise as health care policy, as budgetary policy, and as environmental policy. We strongly urge this committee to decline to fund this ill-considered program.

The principal effect of the proposed victim assistance program would be to circumvent traditional standards of liability.

The program is proposed entirely without reference to this country's elaborate and enormously expensive medical safety net, including tax subsidies for health insurance, disability insurance, Medicare, Medicaid, and workers' compensation.

Unless and until this safety net is demonstrated to be insufficient, the creation of new entitlements programs should be resisted.

The budgetary effects of the proposed demonstration policy are equally ill-considered. We are very concerned that the political pressure on the Congress would be to propose a 50-State multi-billion-dollar entitlement program very rapidly. We believe that this program is, as currently written, very similar to the Black Lung Program established in 1969 to compensate coal miners for a single disease on the basis of an exhaustive study.

It was proposed as a one shot program to terminate in 1976 at an estimated cost of $350 million. By 1981, however, the program was paying benefits to some 460,000 individuals, more than twice the number of coal miners employed at the time, and by that date the beneficiaries had received $11.5 billion in benefits, more than 30 times the initial cost projection.

Finally, a victim assistance program as proposed by H.R. 2022 could divert needed Superfund revenues from waste site cleanups.

NAM respectfully submits that if Congress believes there is a need to proceed on a compensation program for toxic injuries, the great majority of which are unlikely to be associated with Superfund sites, it should have adequate hearings on this issue.

Further, we believe that if the program be proposed, it should be considered on its own merits, and not as a part of Superfund legislation. Thank you, Mr. Chairman.

[The prepared statement follows:]

Statement of H. Richard Seibert, Jr., Vice President, Resources and Technology Department, National Association of Manufacturers

Mr. Chairman, Members of the Committee, I am Richard Seibert, Vice President for Resources and Technology for the National Association of Manufacturers.

NAM is a voluntary business association of more than 13,000 corporations, large and small, located in every state and Congressional district. Our membership ranges in size from America's largest industrial corporations to over 9,000 small manufacturing firms with an employee base of less than 500. NAM member companies employ 85% of all workers in U.S. manufacturing and produce over 80% of this nation's manufactured goods. NAM is affiliated with an additional 158,000 businesses through its Associations Council and the National Industrial Council.

As both corporate and individual citizens, and in many instances as RCRA and CERCLA regulated manufacturers, NAM members have a deep interest in the effectiveness of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), or Superfund. Further, apropos of this Committee's interests this morning, NAM members have financed the bulk of Superfund's activities to date and are likely to continue to do so in the future and thus have a keen interest in the efficiency of this effort. For each of these reasons, NAM appreciates this opportunity to testify.

NAM supports the reauthorization of Superfund. All Americans support the Act's ultimate objective, the prompt and efficient cleanup of abandoned hazardous waste sites. In particular, all agree that EPA must have the authority and capability to intervene immediately and effectively to address imminent hazards to life, health, and property. This authority and capability now exist under Superfund.

Further, there is full agreement that eventually all abandoned hazardous waste sites will be corrected. Let us momentarily leave aside the perennial and contentious issues of "how clean is clean" and of precisely who should pay for what. Let us also momentarily leave aside the question of how many sites may eventually be added to the National Priority List. All can agree that, on a timely and orderly basis, and regardless of precisely where the eventual balance may be struck among competing priorities and objectives, we will resolve the inherited legacy of orphan waste sites. At that juncture, Superfund can and should go out of business; provided that RCRA is effectively enforced, no new Superfund sites should be created.

At issue, therefore, are not our eventual objectives; rather, in question is the more challenging puzzle of how to get from here to there efficiently, promptly, and with a minimum of disruption. In that connection, I would like to address the size and scope of Superfund and, in particular, the inclusion in some reauthorization proposals of provisions that are likely to hinder the Act's objectives of a timely, vigorous, and efficient cleanup program. Such provisions include the so-called victims assistance program, and provision of a federal cause of action.

SIZE OF SUPERFUND

On the basis of EPA's experience since 1980, and with virtually every other interested party, NAM supports a significant expansion of Superfund. At issue is the rate of growth.

Over the last year, EPA officials including Administrators Thomas and Ruckelshaus have repeatedly testified at length on the Agency's capacity to rapidly expand Superfund activities. EPA has consistently sought substantially increased Superfund financing. The Agency has just as consistently acknowledged that there are limits to its ability to efficiently and intelligently manage rapid growth. (See Appendix) EPA has further expressed consistent concern about the effects of diverting Superfund administrative energies and financial resources into ancillary projects which, however well intentioned, promise to retard the timely completion of the program's fundamental objective, the cleanup of abandoned hazardous waste sites.

NAM shares EPA's concerns on these points. EPA's proposed funding level—$5.3 billion over five years—constitutes more than a tripling of Superfund's resources. NAM supports that initiative, an increase, it should be noted, that promises to be largely financed at the expense of our members. Nonetheless, in our experience, federal agencies are likelier to over rather than under-estimate their capacities to spend money wisely, and in this instance, when EPA already advocates an extraordinary surge in funding (and taxation), NAM believes that the Agency's cautions about the risks of too rapid expansion should be heeded.

In particular, EPA repeatedly has noted the administrative constraints facing both the federal and state governments in precipitously increasing the number of remedial investigations and feasibility studies, without regard to the time needed for careful, sound scientific and engineering works and study, critical shortages in both technical staff (particularly groundwater hydrologists), and a shortage of suitable disposal sites.

The latter factor is particularly critical. When Congress amended RCRA in 1984, it banned future land disposal under most circumstances. However, hazardous waste generators are permitted to utilize land disposal in the absence of alternative means of waste treatment or disposal. Thus the generally acknowledged incapacity of current disposal sites to accommodate the requisite quantities of RCRA wastes plus accelerated Superfund cleanups is likely to simply increase undesirable means of land disposal. This, in turn, will tend merely to shift wastes from site to site, from one political jurisdiction to another, and from one generation to the next. This is not a solution; it is an environmental shell game which guarantees additional spills, additional contamination, and repeated, unnecessary expenditures. Shuffling ever increasing quantities of hazardous wastes about the countryside from one site to another via federally approved truck, at taxpayer expense, at ever increasing velocities is an extravagently expensive way to proceed. A more prudent pace, consistent both with the development of adequate waste disposal sites and technologies and with the growth of EPA's management capabilities is surely a better course.

Further, as principal Superfund taxpayers, we fear that ill-considered expansion of funding is likely to erode EPA's incentives to seek efficient, cost-effective methods of cleanup. It threatens as well to prompt the diversion of Superfund resources from narrowly targeted cleanups to ancillary activities which, however well intentioned, are properly outside the scope of CERCLA and its associated funding mechanisms.

SCOPE OF SUPERFUND

NAM supports the timely and efficient cleanup of abandoned hazardous waste sites and, precisely for that reason, resists the dissipation of Superfund energies and funds in initiatives not directly relevant to this objective and, in some instances, likely to impede its attainment. Our comments today are directed particularly at two such issues: the so-called "victims assistance" program incorporated in H.R. 2022 and S. 51 as reported by the Senate Environment and Public Works Committee; and the emergence of significant impediments to timely site cleanup, particularly the creation of a federal cause of action.

H.R. 2022 as well as S. 51 contain so-called "victims assistance" demonstration programs. These provisions would establish an entirely new and potentially uncontrollable federal program to provide medical insurance benefits, and related costs to individuals who may have been exposed to a hazardous substance or release. This is a matter of grave concern to NAM.

Sec. 309 of H.R. 2022 provides for grants of not less than $2 million nor more than $20 million each for ten to twenty demonstration areas. Together the grants may not exceed $75 million each fiscal year. These "demonstrations" are to extend from three to five years in duration.

Eligibility as a "demonstration area" requires that individuals have been exposed "to a hazardous substance and release" and that the Agency for Toxic Substances and Disease registry (established under Sec. 104(i) of CERCLA) complete a study showing the possibility that the area's population is at significant risk of related disease or injury. The ensuing program to be established under Sec. 309 would provide medical screening, examinations, and tests, and if no symptoms have developed from the possible exposure, a medical benefits insurance policy will provide costs for medical screening, testing, and examination. If symptoms do develop, out of pocket medical costs are reimbursed. Group medical benefits, hospitalization, medical, and surgical insurance benefits would also be provided, subject to a $500 annual deductible.

NAM believes that this proposal is unwise as health care policy, as budgetary policy, and as environmental policy. We strongly urge this Committee to decline to fund such an ill-considered expedient.

The proposed victims assistance demonstration program is misdirected as a health care initiative. There has been no demonstration that there exists a widespread pattern of significant chronic illness caused by exposure to hazardous waste disposal sites. Neither has it been demonstrated that any such illnesses or injuries that may arise have not been and cannot in the future be compensated appropriately through traditional liability. Indeed, the principal effect of the proposed victims assistance program would be precisely to circumvent traditional standards of liability in order to establish a new, ill-defined, open ended medical entitlement program based on need, not on a demonstration of waste generators' responsibility. This, in turn, is proposed entirely without reference to this country's elaborate and enormously expensive medical safety net, including tax subsidies for private health insurance, disability insurance and Medicare under the Social Security System, Medicaid, and workers' compensation. Unless and until this safety net is demonstrated to be insufficient, the creation of new entitlements should be resisted. The haphazard creation of new medical entitlements, on an "experimental" basis, promises to further complicate a national health care policy already generally conceded to be badly in need of rationalization and is thus unwise on its own merits as well as inappropriate in the context of Superfund.

The budgetary implications of the proposed demonstration program are equally ill considered. Although the program is initially authorized at $75 million per year, it is difficult to believe that it could in fact be confined to that level. It seems probable that a limited "demonstration" program would, in short order, ballon into a full scale, perpetual, fifty state entitlement. The black lung program was established in 1969 to compensate coal miners for a single disease and, on the basis of exhaustive study, was projected as a "one-shot" program to terminate in 1976 at an estimated total cost of $350 million. By 1981, the program was paying benefits to some 460,000 individuals, more than twice the number of coal miners employed at the time; by that date, beneficiaries had received $11.5 billion in benefits, more than 30 times the initial cost projection. The black lung standards of entitlement are a model of rigor compared with the standards proposed for the toxics victims compensation "demonstration" program.

NAM would respectfully urge—in the absence of any demonstration either of widespread health risks associated with hazardous waste sites or of an incapacity of current health programs and tort law to address any such illnesses, and in the presence of federal budget deficits nearing $200 billion annually—that the Congress not gratuitously expose the federal government to yet another open ended entitlement program.

Finally, a "victims assistance" program, as proposed by H.R. 2022 and S. 51, is counterproductive as environmental policy. Its effect would be chiefly to divert needed Superfund resources from waste site cleanups, with ancillary effects which, as noted earlier, would be generally inimical to sound health and budgetary policy. EPA has estimated that the number of NPL sites could grow to between 1,500–2,000, and other estimates range considerably higher. Siphoning substantial funding from cleanup efforts, in order to finance other objectives of—at best—debatable value can only impede completion of Superfund's mission.

NAM respectfully submits that if Congress believes there is need to proceed to a compensation program for toxic injuries, the great majority of which are unlikely to be associated with Superfund sites, it should have adequate hearings on this issue. Further, we believe that if such a program be proposed it should be considered on its own merits, and not as a part of Superfund legislation.

In summary, NAM supports a significant expansion of Superfund but believes that EPA's cautions about excessively rapid growth are well founded and should be heeded by this Committee. NAM believes, further, that Superfund ought to remain targeted on its cleanup objective and that diversionary experiments should be resisted. Thank you.

APPENDIX

Administrator Thomas has repeatedly testified that the maximum amount that EPA can efficiently spend on the Superfund program is approximately $1 billion per year. The reasons for this are many, but the following provides a partial list:

Technical staff. One of the greatest constraints to a rapidly increased Superfund program appears to be the lack of available technical staff, especially EPA project managers and personnel with expertise in groundwater hydrology.

A recent interim report by the Surveys and Investigation Staff for the House Committee on Appropriations states the following:

"The Director of EPA's Office of Emergency and Remedial Response (Superfund) related that his recent staff buildup has substantively depleted the pool of available personnel qualified for employment in the Superfund program; and that before further program expansion can take place, the new hiree will need time to gain the training and experience necessary to deal with the complications of Superfund projects."

This same report states:

"In a canvass of EPA personnel to determine numbers and experience levels, EPA Regions I, II, and IV reported only eight groundwater experts on their rolls, three of whom were below journeyman level. Of these eight experts, the work time of four was diluted because they also functioned as full time remedial project managers.

The Investigative Staff believes that this lack of experienced personnel has slowed the progress of projects through the Superfund pipeline. However, as EPA staff is trained and gains experience, the problem should be resolved."

The Summary of the report "Superfund Strategy", prepared by the Office of Technology Assessment, states:

"Moreover, a shortage of experienced technical experts in several fields may explain a lack of quality performance now and it may cause a major bottleneck in an expanded Superfund program. OTA estimates the demand for technical professionals (primarily, bachelors level) to work on cleanups of uncontrolled sites may rise from the present 3,750 to about 21,000 by 1995 and then stabilize at that level. This projection assumes an increased national cleanup effort of about $4 billion annually from all sources. Current educational programs may not be able to prepare sufficient numbers of some professionals, particularly hydrogeologists, and perhaps toxicologists, geologists, civil engineers, and some types of chemists. But a more critical problem is that the already strong demand for people with a masters degree and 3 to 5 years of experience may increase and not be met for the next decade."

Lab Capacity. The Superfund program is straining the capacity of labratories because of the amount and type of analysis required. This demand will continue to increase over the next couple of years.

Safe Disposal Sites. The lack of safe disposal sites has hampered the progress of the Superfund program. The interim report to the House Appropriations Committee found that several states' geological structures are not conducive to the construction of hazardous waste landfills. In addition, public concern has limited the construction of hazardous waste landfills as well as produced a growing reluctance by some jurisdictions to accept Superfund waste from other states or regions.

Site Study. Each site and situation is different, resulting in different problems. As a result, each site requires its own unique engineering and construction plans.

For these, and other reasons that the EPA has outlined, it is prudent management to grant the Agency enough money to perform their cleanup work as quickly and as efficiently as possible. NAM believes that Congress should allow enough flexibility for the development of technology to provide solutions for the hazardous waste problems rather than simply moving the material from place to place.

Mr. HEFTEL. Thank you.

Mr. Yost.

STATEMENT OF JOHN R. YOST, PRESIDENT, MUSKEGON CHEMICAL CO., ON BEHALF OF THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURERS ASSOCIATION

Mr. YOST. Mr. Chairman, my name is John Yost, and I am appearing here today for the Synthetic Organic Chemical Manufacturers Association, which is a nonprofit organization which includes 50 small companies, of which my company is certainly an example.

My company has something less than $4 million in sales. It makes synthetic organic intermediates for the pharmaceutical industry and we use many of the acids, bases, and solvents that have been taxed by the Superfund Program under the present system.

I would like to make five points, if I may, briefly. The first is that we support Superfund. It is very much in our interest and very much in the public interest to get this problem behind us. We are really in support of Superfund.

I would like to also comment in terms of the scope, the size, and the method of funding of Superfund. What I would like to say about tbe scope is that Superfund is fundamentally to deal with the hazardous waste issue. Certain of the amendments to the bill—and

I speak particularly from the small business point of view, of the Lautenberg amendment, would give some questionable information at very, very high cost to particularly small companies, which really, in our opinion, is not germane to the central purpose of that bill. It would be a very, very expensive amendment.

The data asked for is all available currently in different forms with State agencies, with local police and fire departments, and so on, and to go through a new procedure with new measurements would be terribly expensive.

As far as the size of Superfund is concerned, we support any adequate level of funding that is consistent with the ability of EPA to handle it, and so therefore, the levels at which they are saying they can handle, would be levels we could support, which I believe is in the range of $5.3 billion.

As far as the method of funding is concerned, we are very much advocates of the broadest-based tax that we can get. We have no objection to the current tax on feedstocks. We have no objection to a tax on waste, end products.

However, we feel that Superfund is more than just the chemical industry, which these taxes bear very much on, and we would favor funding more akin to the Bradley bill which mixes a mix of four sources of funding—waste end tax, feedstocks, taxes on corporations with profits over $50 million, and some money out of general revenues.

And finally we would ask that any funding, or any impact on companies like ours take into consideration the impact on trade. What we would like to ask for is a trade neutral bill.

We have been fighting, sometimes, for what we think is our existence, in the last few years, fighting the strong dollar, and competition from Europe and from Japan, and so on.

If we are to be taxed—and we certainly do not mind paying our fair share—we would hope that this tax would not then further put us at jeopardy by adding to the cost of American goods and giving imports a further advantage. Thank you very much. I would like to be able to file my formal written statement.

Mr. **Heftel**. So ordered.

[The prepared statement follows:]

Statement of John R. Yost, President, Muskegon Chemical Co., Whitehall, MI, on Behalf of the Synthetic Organic Chemical Manufacturers Association (SOCMA)

The reauthorization of Superfund raises serious issues of potential economic burden on smaller firms as a result of the funding issues being considered by Congress. The key issues which presently concern smaller chemical firms are the scope of the fund, the size of the fund, and the mechanisms used to finance the program.

The Agency's primary responsibility, as mandated by the Superfund program, is to provide emergency response and remedial action for immediate and long-term threats posed to human health or the environment from abandoned or inactive hazardous waste sites. We believe that this should remain the primary goal of the Superfund program because expansion of the program to cover incidents not related to hazardous waste sites will only dilute the limited resources available to the Agency, and increase the potential economic burden on small firms.

Second, the size of the fund is important to small business because taxes on segments of the chemical industry have been, and will likely continue to be, the largest source of money for the fund. There is a limit, we believe, to the amount the chemical industry can actually absorb. Small companies are adversely impacted by the downstream effects of the taxes imposed on feedstocks used to make the specialty products which are the principal markets of small manufacturers. We believe that the funding provided by Congress, therefore, should be an amount which the Agency can effectively manage and, hence, oppose any unnecessary efforts to generate funds which cannot be wisely spent.

Further, liability for cleanup for smaller firms should be apportioned among the responsible parties according to their relative contribution to a site. This would benefit small business by discouraging the misuse of the current standards which can force a firm to pay clean-up costs far out of proportion to its contribution.

Third, we favor broader-based financing mechanisms in addition to the current emphasis on taxing chemicals and petroleum feedstocks. We support, in principle, the funding proposals set forth in Senator Bradley's Superfund proposal for 1985. The Bradley bill would finance Superfund from four sources: the current feedstock tax, general revenues, a waste-end tax, and a tax on corporate net receipts in excess of $50 million. A broader based funding mechanism will reduce the amounts needed from each source, and alleviate some of the potential economic burden on smaller firms.

Finally, we believe that any legislative proposals which address Superfund should be trade-neutral in effect. We urge that Superfund not make imports artificially cheaper than American products since the potential to impose hardship on industry, especially in the case of smaller firms already experiencing price competition from imports because of the strong dollar, would be great.

In sum, small chemical firms can be economically crippled if Superfund is reauthorized without careful deliberation about the impact on small business. We urge that careful consideration be given to small business, and especially to the points we have raised above.

SOCMA is a non-profit trade association with approximately 100 member companies which manufacture organic chemicals in the United States. Over half of these companies are considered small companies, with annual chemical sales under $50 million. They produce a wide variety of synthetic organic products which are essential to virtually every other American industry, and are responsible for much of the innovation in the industry today.

Mr. Heftel. Mr. DiBona.

STATEMENT OF CHARLES J. DiBONA, PRESIDENT, AMERICAN PETROLEUM INSTITUTE

Mr. DiBona. Thank you, Mr. Chairman.

My name is Charles J. DiBona. I am president and chief executive officer of the American Petroleum Institute. I have some brief remarks but I would like to file a formal statement for the record.

Mr. Heftel. So ordered.

Mr. DiBona. The API supports the cleanup of abandoned hazardous waste sites and favors reauthorization of CERCLA at a higher level of funding.

My comments will focus on the level of spending, sources of funding, and scope.

First, as to the rate of buildup in spending during the next 5 years. It is important to separate the rate of buildup in this period from the question of the total cost over the life of the program.

While today, no one really knows how much the program will eventually cost, we believe that the buildup should be limited to a level that can be managed by EPA, which has stated that it could manage effectively and efficiently a total of about $5 billion over the next 5 years.

Our own experience suggests that would be an absolute maximum. In addition, the efforts of private parties, State and local government and the Defense Department, should bring the total cleanup for this period to close to $10 billion.

Now as to the source of funds. We were pleased to see in the chairman's press release announcing this hearing, that you were approaching the issue of funding sources with an open mind, and planned to carefully review alternative sources of revenue.

Currently, the petroleum and chemical industries pay almost all of the—all the feedstock taxes that provide 87 and a half of Superfund moneys, with the rest coming from general revenues.

As the Superfund spending increases, the funding base should be broadened, because the sources of hazardous waste are diverse and because the cleanup of abandoned waste sites benefits us all.

For example, at the Stringfellow site in California, EPA has identified 291 potentially responsible parties, very few of which are petroleum and chemical companies.

Those responsible include a broad cross section of U.S. industrial, agribusiness, and Government sources, and this is not atypical.

Although the oil industry's current feedstock tax payments represents more than the industry contributes to the problem, we would nevertheless support a continuation of the present petroleum and chemical feedstock taxes at $300 million a year. The industry would also support a properly designed waste end tax applied to dry weight and limited to $300 million a year. We believe the administration's proposed waste end tax is not a waste disposal tax, and is defective for several other reasons addressed in our written statement.

Beyond the $600 million a year total that continued feedstock taxes and a properly written waste end tax would raise, the remaining funding should come from general revenues and from interest recoveries and borrowing authority.

To the extent that budgetary considerations preclude the use of general revenues, then API believes that an alternative broad-based tax should be used.

The API believes that S. 957 introduced by Senators Bentsen and Wallop is the broad-based proposal that most closely satisfies several important criteria.

S. 957 provides for a tax to be imposed upon all tangible personal property sold, leased or imported by a manufacturer at a specified percentage of the sale or lease price.

The imposition of a tax on manufactured goods bears a fair relationship to the environmental problems Superfund is intended to address from the standpoint of the sources of the wastes, and any benefits of less costly past disposal practices.

The API would urge that the Superfund excise tax be a separately stated transaction tax. We believe that a separately stated tax that allows a credit to offset any Superfund excise tax paid with respect to a manufacturer's purchases would more closely reach the goal of competitive neutrality.

By using a full credit method, there would be less tax on tax, and it would tend to have the same impact on unit costs of each manufacturer. Perhaps the most important feature is that this system would facilitate the proper taxation of imports and the rebate of tax on exports.

Foreign goods imported into the United States would enjoy no competitive advantage, and American made goods would suffer no competitive disadvantage in world markets.

While the unfamiliarity of any new tax can raise some administrative concerns, we believe that the Superfund excise tax would be the least difficult to handle.

Beyond the simple question of equity, tripling the size of Superfund but keeping Superfund's tax base unchanged, would impose an added burden on a part of the industry already in distress.

In recent years, more than 115 refineries have been closed, 11,000 jobs cuts, and the remaining refineries are operating at 25 percent of capacity, or below their capacity.

Other environmental costs are being incurred for such areas as lead phasedown, and the implementation of the 1984 RCRA amendments. Finally, as to scope. The bill reported by the State/Senate Environmental Committee, S. 51, contains a victims assistance demonstration program. As we have detailed in our written statement, the existing evidence indicates that these sites are not a primary cause of chronic illness. The causes are elsewhere. The health care of the Nation is important but it would be wrong to create a massive back door national health care scheme, or insurance program under the regime of Superfund.

Thank you.

[The prepared statement follows:]

STATEMENT OF THE AMERICAN PETROLEUM INSTITUTE

SUMMARY

Level of funding

The API believes that cleanup of the nation's abandoned hazardous waste sites is an important national priority that must be addressed promptly and efficiently.

The build-up in Superfund should be increased at a rate so that spending during the next five years is limited to $5 billion.

A fund of $5 billion over five years represents a year-by-year compounded increase in spending of 20 percent, based on EPA's estimated spending level for fiscal year 1986. The $7.5 billion recommended in the bill reported by the Senate Environment and Public Works Committee, S.51, would represent a year-by-year compounded increase of 30 percent.

The $5 billion earmarked for Superfund would be only part of the five-year hazardous waste cleanup effort. Private party, state and local government and Department of Defense efforts could bring the total cleanup to nearly $10 billion.

Sources of funding

Currently, the petroleum and chemical industries pay almost all of the feedstock taxes that provide 87.5 percent of Superfund monies, with the rest coming from general revenues.

The funding base of an increased Superfund should be broadened because the sources of hazardous waste are diverse, and because the cleanup of abandoned waste sites benefits us all.

Beyond the simple question of equity, tripling the size of Superfund but keeping the tax base unchanged would impose an added burden on a part of the industry already in distress: more than 115 refineries closed, 11,000 jobs cut, and remaining refineries operating at 25 percent below capacity.

Although the oil industry currently pays more in feedstock taxes than it contributes to the problem, the oil industry would support a continuation of the present petroleum and chemical feedstock taxes at $300 million a year.

The oil industry would also support a properly designed waste-end tax—applied to dry weight and limited to $300 million a year.

The Administration's proposed waste-end tax is not a waste disposal tax and is defective for other reasons.

The remaining funding above $600 million a year should come from general revenues and from interest, recoveries and borrowing authority.

To the extent that budgetary considerations preclude the use of general revenues, then an alternative broad-based tax should be used.

An alternative broad-based tax should meet these five criteria:

(1) Be broad-based.

(2) Bear a relationship to the environmental problems Superfund is intended to address.

(3) Be competitively neutral.

(4) Maintain import-export neutrality.

(5) Be relatively easy and inexpensive to administer.

The API believes that S.957 introduced by Senators Bentsen and Wallop in the Senate is the broad-based proposal that most closely meets these five criteria.

S.957 provides for an excise tax to be imposed upon all tangible personal property sold, leased or imported by a manufacturer at a specified percentage of the sale or lease price.

The API would urge that the Superfund excise tax be a separately stated excise tax.

Scope

The purpose and scope of Superfund should remain firmly guided by the need to clean up abandoned uncontrolled hazardous wastes.

Impediments to voluntary cleanup should be removed to encourage needed private party action.

The Senate Environment Committee reported bill, S.51, contains a victims assistance demonstration program, but the existing evidence from the scientific community suggests that hazardous wastes are not a primary source of chronic illness in the United States.

The health care of the nation is important but it would be wrong to create a massive back door national health care or insurance program under Superfund.

STATEMENT

The American Petroleum Institute (API) respectfully submits these comments on the reauthorization of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the Hazardous Substance Response Revenue Act of 1980 (Superfund). The API is a trade association serving approximately 6,000 individual and 235 corporate members in all facets of the petroleum industry. We appreciate this opportunity to present our views on Superfund reauthorization.

API supports reauthorization. We believe that cleanup of the nation's abandoned hazardous waste sites is an important national priority that must be addressed promptly and efficiently. We believe reauthorization should remain firmly guided by that goal.

Our comments focus on three basic points: (1) the rate of build-up of Superfund; (2) the sources of funding for Superfund; and (3) the appropriate scope of Superfund. In addition, our comments will cover other key concerns.

First, Superfund was enacted principally to ensure a ready source of federal funding to cleanup uncontrolled hazardous wastes and to clean up wastes where responsible parties could not be determined or assessed for the cleanup costs. The rate of build-up in spending during the next five years should be increased at a level commensurate with making progress in cleaning up sites and the Environmental Protection Agency's (EPA) capacity to use the fund's revenues efficiently.

It is important to separate the rate of build-up from the question of the total spending that may be required over the life of the program. While today, no one can confidently address the latter question, we believe the build-up should be limited to a level of about $5 billion over five years—the amount EPA has said it could efficiently and effectively manage. This is more than a threefold increase over the existing level. Funding at this level would allow the agency to move forward to deal effectively with the most critical abandoned uncontrolled hazardous wastes.

Second, to provide revenues for the response fund, we believe the sources of funding for CERCLA should be broadened, reflecting the fact that (1) EPA has found wastes from all types of businesses and government entities in hazardous waste sites, (2) the petroleum and chemical industries' share of Superfund taxes is far greater than their share of the wastes, (3) the existence of abandoned hazardous wastes is a broad public problem and cleanup provides broad public benefits, and (4) the oil and chemical industries would be seriously damaged financially if asked to disproportionately support a Superfund increased in size.

Third, we believe expanding the coverage of Superfund to matters tangential to the cleanup of abandoned hazardous wastes will merely lengthen the time needed to accomplish the cleanup task. CERCLA's focus should not be diffused by establishing a public compensation scheme. CERCLA was never intended to replace other environmental statutes such as the Resource Conservation and Recovery Act (RCRA), the Toxic Substances Control Act, the Clean Water Act, the Clean Air Act or the Federal Insecticide, Fungicide, and Rodenticide Act.

THE SIZE OF THE FUND

API believes that the rate of build-up in spending should be limited to a level that can be managed by EPA efficiently and effectively—to about $5 billion over five years. The Administration's proposal would reauthorize Superfund at a level of $5.3 billion. EPA Administrator Lee M. Thomas said that this level of funding would: triple the resources available for cleaning up hazardous waste sites; give EPA the tools needed to continue implementing Superfund at the accelerated pace of the past two years; and allow EPA to get the cleanup job done as quickly and completely as possible.

A fund of $5 billion over five years represents a year-by-year compounded increase in spending of 20 percent, based on EPA's estimated spending level for fiscal year 1986. The $7.5 billion recommended in the bill reported by the Senate Environment and Public Works Committee, S.51, would represent a year-by-year compounded increase of 30 percent. A compounded increase in funding of 20 percent a year over the next five years would permit EPA to make significant progress. Experience shows that it is difficult to manage a faster rate of expansion than this for industrial activities without gross inefficiency.

The API is aware that the Congressional Research Service (CRS), in a report dated April 2, 1985, suggested that EPA could spend more than $5 billion effectively over the next five years cleaning up hazardous waste sites. But, the CRS report cannot be used as a basis for determining the proper rate of build-up of Superfund because it glosses over two key factors EPA has identified as important constraints. First, EPA has doubled its Superfund management staff over the past 18 months; but, in the words of EPA Administrator Lee Thomas, the growing pains have been "traumatic". Skilled personnel, particularly groundwater hydrologists, are in short supply and there are few managers experienced in cleaning up waste sites. Second, EPA faces severe problems in some regions of the nation finding suitable facilities in which to deposit wastes removed from Superfund sites.

Furthermore, $5 billion earmarked for Superfund would be only part of the five-year hazardous waste cleanup effort. Private party cleanups for the next five fiscal years are expected to be on the order of $2 billion and state and local government activities are expected to exceed $1 billion. In addition, another $1 billion or more may be spent by the Department of Defense to clean up wastes with which it is associated, bringing the total cleanup effort over the next five years to nearly $10 billion.

BROADENING CERCLA'S FUNDING

Currently, petroleum and chemical feedstock taxes provide funding for 87.5 percent of Superfund, with the rest from general revenues.

As the rate of build-up in Superfund increases, the funding base must be broadened. The sources of hazardous waste represent a broad cross section of U.S. industrial and agribusiness concerns, as well as government agencies, and the cleanup of abandoned waste sites is a general public problem.

API suggests that $1 billion a year could be raised from (1) the current feedstock taxes (more than 95 percent of which is paid by the petroleum and chemical industries)—about $300 million a year; (2) a new waste-end tax—about $300 million a year; (3) general revenues—about $200 million a year; and (4) recoveries, interest and borrowing authority—about $200 million a year.

Impact on the refining industry

The petroleum refining industry cannot pay more without serious negative impact on its future. Based on recent domestic refinery runs, each one cent per barrel increase in the CERCLA tax on crude oil would raise domestic refiners' costs by about $45 million per year. An additional tax burden could well cause cutbacks in domestic refining in addition to those already experienced by that industry.

There is substantial idle capacity in the already shrunken domestic refining industry, despite the U.S. economic recovery. Since 1981, more than 115 domestic refineries have ceased operating. That represents a reduction of almost one-third of all U.S. refineries. Even with that reduction, the remaining refineries continue to operate at 25 percent below capacity. Although nationwide refinery profit margins are not available, Gulf Coast refinery estimates, accounting for about 40 percent of U.S. refining, show negative average operating margins for most of the period since the fourth quarter of 1983. In addition, several large companies, for which data are available, had refining/marketing profits of less than one cent per gallon, which suggests that their operations were at best only marginally profitable. Other large companies reported refining/marketing losses.

In sum, the domestic refining industry has fared poorly during the past few years. The industry is suffering from lower demand for refined products, heightened competition from product imports, the high costs of upgrading refining facilities and substantial additional environmental control costs. The recently announced rule to further phase down the lead content in gasoline is an example of the continued high environmental control costs. Singling out the U.S. refining industry for increased CERCLA taxes, when they already are paying more than their fair share, would make even worse an economic environment that has already seen a loss of 11,000 jobs.

Waste-end taxes

Several waste-end tax proposals are now before Congress, including the Administration's proposal, introduced as H.R. 1342, for a new tax on waste generation.

The Administration's proposed tax is designed to raise $600 million a year but could impose a far heavier burden, depending on RCRA hazardous waste decisions yet to be made. API supports a properly written tax on hazardous waste disposal—rather than on generation—of about $300 million a year.

An important criterion for any tax is certainty of effect. Taxpayers—to plan properly—need to know on what the tax will be based and approximately how much tax they will owe. The government needs a reliable and predictable source of revenues under the tax. But under the Administration's proposed waste-generation tax the petroleum industry's tax burden would be uncertain because RCRA hazardous waste decisions yet to be made could greatly affect the amount of tax owed.

For example, under an interpretation of the "mixture rule", one EPA region has indicated that water from a separator (an oil-water separating device) could be hazardous. Under the interpretation, water in the separator could have come in contact with sludge (a hazardous waste), mixing minute particles of the sludge in the water. Thus, all outflow from the separator, almost entirely water, would be considered a hazardous waste. Taxing such outflow as if it were a hazardous waste would be inequitable. In the interest of equity, it is recommended that the Congress explicitly specify the wastes that are to be taxed upon enactment of a waste-end tax, and specifically provide that the list of taxable wastes and the rate of tax can be altered only by a subsequent act of Congress.

Also, using a dry weight basis for a waste-end tax, instead of a total or "wet weight" basis as in the Administration's bill, would help prevent future regulatory decisions from causing unfair tax burdens. Dry weight is the weight of the waste after removing the weight of water. Using a dry weight basis would insure that the tax is imposed on the actual content of hazardous material and thus avoid distorting waste management practices.

Both taxpayers and the Internal Revenue Service already have experience with using taxes based on dry weight under the existing Post-Closure Liability Tax, now a part of CERCLA. Taxpayers are determining dry weight through routine analytical procedures, and the Internal Revenue Service is now collecting revenues on a dry weight basis under this tax.

Additional requirements for an acceptable waste-end tax are:

First, favorable consideration of land treatment of biodegradable oily waste to take into account the environmentally sound destruction of oily material that occurs at such land treatment facilities.

Second, explicit exemption of secondary and tertiary wastewater treatment facilities from taxation.

Finally, special consideration should be given to wastes removed from all CERCLA sites so as not to frustrate efforts to reach settlement agreements quickly.

Why the funding base should be broadened

There are compelling arguments for broadening the base of funding for Superfund.

First, Superfund benefits the entire population of the nation. The Superfund cleanup effort helps provide a cleaner environment for everyone as well as for the diverse group of residents and property owners who more directly benefit from cleanup.

Second, although the petroleum and chemical industries pay almost all of the current feedstock tax, hazardous wastes are generated by many industries throughout the economy. Even with respect to oil and chemical wastes found at waste sites a high percentage were deposited there as a result of manufacturing processes carried out by companies not in the oil or chemical industries.

At the Stringfellow site in California, EPA has identified 291 potentially responsible parties who may have contributed waste. Only a small percentage of those identified are petroleum or chemical companies. At Stringfellow, the potentially responsible parties include a broad cross section of U.S. industrial and agribusiness concerns—large and small. These companies make products consumed throughout the United States by all of society. Food, apparel, paper, fabricated metals, electronic and transportation equipment were some of the product manufacturers identified. In the non-manufacturing sector, such concerns as agribusiness, motor freight, air transportation, communications and business services were identified. Other contributors of waste at the Stringfellow site were the City of Los Angeles, the U.S. Air Force and the U.S. Navy.

A look at substances found at hazardous waste disposal sites reveals similar inequities. According to EPA, of the 30 most frequently found substances at 881 hazardous waste disposal sites, only 11 are subject to the tax. Of the seven substances found most frequently at these sites, only two are subject to the tax.

A report to EPA has estimated that petroleum refiners generate less than 5 percent of the nation's hazardous wastes. Yet crude oil accounts for about 15 percent of Superfund's tax revenues. Proposals to increase that percentage clearly are inequitable.

Third, it also is important to note that current producers or users of hazardous materials are not necessarily those who were responsible for problems at hazardous waste sites. Often, the responsible firms are no longer in business. Taxing current production to pay for past actions is neither economically efficient nor equitable.

In conclusion, it is neither logical nor fair to ask these two industries to shoulder a vastly increased burden for cleanup of abandoned waste sites for which others are responsible.

Broad-based funding source

Any amount of taxes above the $600 million in feedstock and waste-end taxes should come from general revenues. General revenues provide the broadest and fairest source of funding because all taxpayers benefit from the cleanup. When general revenues are relied upon, economic decisions are not distorted as they would be when taxes are targeted to specific industries.

To the extent budgetary considerations preclude the use of general revenues, then API believes an alternative broad-based tax should be used. API has identified five criteria which we believe should be applied to an appropriate alternative. Such a tax should:

(1) Be broad-based.

(2) Bear a relationship to the environmental problems Superfund is intended to address.

(3) Be competitively neutral.

(4) Maintain import-export neutrality.

(5) Be relatively easy and inexpensive to administer.

API believes S. 957, introduced by Senators Bentsen and Wallop in the Senate, is the broad-based proposal that most closely follows these criteria.

The bill, S. 957, provides for an excise tax to be imposed upon all tangible personal property sold, leased, or imported by a manufacturer or importer at a specified percentage of the sale or lease price. Such a broad-based tax is an appropriate source of tax revenues for Superfund because no single industry, or small group of industries, would bear an undue burden. Because the tax base would be very large, a tax rate on sales as small as one-hundredth of 1 percent—0.01 percent—would raise approximately $140 million a year.

The imposition of a tax on manufactured goods bears a fair relationship to the environmental problem Superfund is intended to address. Benefits from and responsibility for hazardous substance generation and disposal have been widespread throughout society. Many common consumer goods involve the manufacture or use of hazardous substances, and the past prices of these goods have reflected the less costly waste disposal practices that no longer are acceptable.

The API urges that the Superfund excise tax be a separately stated transaction tax. We believe that a separately stated tax that allows a credit for the tax already paid on the manufacturers' purchases would more closely reach the goal of competitive neutrality—rather than a system that allows a credit for only that part of the Superfund excise tax paid with respect to materials directly contained in the property sold. By using a full credit method, there would be less "tax on tax", and it would tend to have the same impact on unit costs of each manufacturer.

This system would also facilitate the proper taxation of imports and the rebate of tax on exports. It is perhaps the most important feature. Foreign goods imported into the United States would enjoy no competitive advantage, and American-made goods would suffer no competitive disadvantage in world markets. Because it is a transaction tax, it is likely to be considered legal under the provisions of GATT.

While the unfamiliarity of any new tax can raise some administrative concerns, we believe the Superfund excise tax would be the least difficult to handle. Excise tax concepts are familiar to both government and private tax administrators who work with existing manufacturers excise taxes. At tax reporting time, the manufacturer would pay the net of the excise tax collected on sales less the excise tax paid on purchases from other manufacturers. Thus, the amount of tax owed to the government at any stage in the manufacturing chain would take into account the amount of tax already paid by other manufacturers earlier in the production chain. Manufacturers could adapt existing sales and purchase billing systems to identify and compute the net amount of tax due the government.

The Internal Revenue Service already audits existing excise taxes and should be able to adapt to a new excise tax for Superfund. Under existing manufacturers excise taxes, IRS auditors usually check accounting and billing systems, total volume of sales, and related general items. If this procedure reveals no discrepancy, further detailed examination of records is unnecessary.

To reiterate, API believes that general revenues at the levels described above are the best way for the nation to pay for cleanup of abandoned hazardous wastes. If budget considerations make use of general revenues impractical, then a manufacturers environmental excise tax, of the type just discussed, would be a reasonable substitute.

Retain a capping feature

The current Superfund law contains a "capping" feature which provides that authority to collect the tax would terminate when cumulative receipts from the petroleum and chemical taxes reach a specified protion of the overall authorization. The capping feature also provides that if the unobligated balance in the Fund exceeds a specified amount on September 30 of any calendar year, then no taxes are to be imposed during the next calendar year. That feature should be retained.

The capping provision avoids the economically inefficient buildup of large unobligated balances in the fund at any time during the authorization period. Furthermore, it provides an orderly transition in the event that total revenues actually collected from the funding sources exceed the authorized total expenditures for the program.

Retain the Post-Closure Liability Trust Fund

API believes that the Post-Closure Liability Trust Fund should be retained. Repeal as proposed by the Administration would discourage cleanup by opening up unlimited liability for an indefinite future period to any party entering into a cleanup agreement. A private party—no matter how small its involvement—could not afford to accept that risk and would have little choice but to avoid entering into any cleanup agreement. Thus, voluntary cleanup efforts would be greatly reduced and would be replaced by acrimonious legal proceedings.

The Post-Closure Liability Trust Fund will assure a reliable source of funds for EPA to handle any cleanup problems that may occur after closure of current RCRA disposal sites.

Repeal of the Post-Closure Liability Trust Fund would create cleanup problems in the future. It is not enough to simply clean up the problems of yesterday. We must anticipate the potential problems of the future and provide necessary funds to deal with them. Repeal of the Fund is inconsistent with this objective.

SCOPE OF CERCLA

API believes that the purpose and scope of Superfund should remain firmly guided by the need to clean up abandoned uncontrolled hazardous wastes for which there is no solvent responsible party. The Administration has said that its proposal would concentrate EPA resources on hazardous waste sites. These are the sites Congress originally intended to be the focus of Superfund.

API views the categorical limitations on scope contained in Section 101 and Section 113 of the Administration's Superfund proposal as a positive step toward returning the Act's response authority to its original intent: the cleanup of abandoned hazardous waste sites for which there is no responsible party. Other environmental concerns, resulting from pesticides or mining, have been and are best addressed by other environmental laws. Amendment of those laws is the proper course for correcting any deficiencies that remain in meeting those other concerns.

Impediments to voluntary cleanup

If sites containing hazardous wastes are to be cleaned up in an expeditious fashion, then private party action must be encouraged as a necessary complement to governmental cleanup. Currently, CERCLA fails to include certain basic legal protections for private party cleanups. Some specific provisions actually deter such action. API believes that encouraging responsible private party response action at single and multi-party Superfund sites is a worthwhile goal. CERCLA should be amended to encourage the expertise and the resources of the private sector to be used to help remedy this national problem.

1. Protections must be revised

Section 107(d) of CERCLA currently purports to protect a person from future liability for rendering care, assistance or advice in accordance with the National Contingency Plan (NCP) or at the direction of an on-scene coordinator. This provision, as now in the law, has severely limited utility. Section 107(d) protects a party from liability merely for "damages"—a term which Section 101(6) of CERCLA defines as "damage for injury or loss of natural resources." While API believes such "damages" should be included in any type of "Good Samaritan" protection, Section 107(d) should be expanded to include all "response costs." No volunteer should be expected to act when faced with incurring potentially endless future liability after payment of the initial response costs at a site.

2. The liability provisions must be reexamined

The existing case law interpreting CERCLA indicates that Section 107: (1) allows the imposition of strict, joint and several liability, and (2) provides no meaningful defenses to liability (for example, there will be liability even when third party action was clearly the cause of the damage). This unusually broad liability inhibits voluntary cleanup. API believes that the liability provisions should encourage voluntary site cleanup:

a. Clean-up action voluntarily undertaken by a party should not be used as evidence of the party's responsibility for the site. Such voluntary action should not be admissible in any subsequent legal proceeding.

b. At multi-party sites, equitable apportionment of damages should be guaranteed. In many instances, because volunteers may also be responsible parties, they will be reluctant to act because they might be held liable for all response costs and damages. In this regard, joint and several liability deters voluntary action. If volunteers are ensured that there will be an equitable apportionment of the costs and damages among responsible parties, they will have an incentive to act aggressively to clean up waste sites.

c. There should be an acknowledged right of contribution—that is, a right to collect from potentially responsible parties for their portion of a multi-party site cleanup. Such a right is imperative if volunteers are to have any incentive to clean up hazardous waste sites. If volunteers are partially responsible for a site cleanup, they may be willing to clean up the entire site if they have a right of contribution against another responsible party or against the fund if the responsible parties are insolvent or bankrupt.

d. Finally, API believes that CERCLA has gone too far in eliminating traditional liability defenses regarding the negligence of third parties. API believes the act should reflect the more modern concept of "comparative negligence." Other defenses could be added which would provide an incentive for more aggressive private party voluntary cleanup.

The overly broad liability provisions contained in CERCLA should be modified in instances of voluntary cleanup. Greater equity in the statute will, we believe, promote more voluntary action.

3. Releases from liability

If voluntary cleanup is to be encouraged, responsible parties should be released from future liability both at the site being cleaned up and at sites where cleanup material may be deposited in accordance with the National Contingency Plan (NCP).

a. Reopeners

API believes the current federal government settlement policy does not reflect a sufficient commitment to the use of liability releases as a means of encouraging cleanup negotiations, and suggests several changes that would significantly enhance private party cleanup.

First, the policy undermines the impact of releases by requiring the use of "reopener clauses." The policy requires that regardless of the expansiveness or stringency of the release in other respects, the settlement documents must include reopeners which preserve the right of the government to seek additional cleanup action and recover additional costs from responsible parties in a number of circumstances. A reopener will allow the government to modify the agreement whenever the site conditions may present an imminent and substantial endangerment because (1) previously unknown conditions are discovered, or (2) additional scientific information becomes available about the conditions that was not known at the time of the agreement.

API believes that these reopeners deprive the settlement process of both fairness and finality. A release combined with a reopener provides little assurance to a negotiating party that it will in fact ever be released from liability. These reopeners significantly weaken the incentive to engage in voluntary cleanup negotiations.

b. Secondary site liability

As the federal government addresses a waste site under CERCLA, it determines the appropriate method of cleanup in accordance with the National Contingency Plan. At some sites, the most appropriate method may be the "off site" removal of the waste from the CERCLA site to a RCRA facility.

Although RCRA provides ample authority to secure any future cleanup, the federal government has taken the position that the secondary site is also subject to cleanup actions under CERCLA or other federal laws. Private parties are potentially liable for the cleanup of their wastes originally deposited at a CERCLA site and then moved to the secondary or RCRA site, in accordance with all government requirements.

This position is unnecessary and counterproductive in view of the comprehensive nature of the RCRA regulatory scheme and Congress' intentions in enacting CERCLA. Private parties at CERCLA sites, who are negotiating to pay for the remedy of moving wastes to secondary sites, have sought to trade the uncertain outcome of litigation for the payment of a sum certain to end the dispute. Without a secondary site release, there is little incentive to voluntarily agree to a cleanup of the CERCLA site.

If CERCLA is clarified to ensure that private parties who have previously paid cleanup costs at the original disposal site will be released from the contingent secondary site liability, more beneficial settlements in the future will result. Federal policy should encourage private parties to clean up CERCLA sites, and should address the highly speculative need for future corrective action at RCRA sites through normal RCRA mechanisms.

4. Neither EPA nor outside parties should be allowed to delay voluntary cleanup

To encourage more voluntary action, CERCLA should free volunteers from needless federal or state approvals as long as the actions are consistent with the NCP. Public participation in voluntary cleanup actions should not impede or delay the progress of the cleanup.

Voluntary cleanup actions, even when involving potentially responsible parties, should not be delayed by needless federal red tape or attack from outside parties. Many removal type actions, such as those associated with spill cleanup, will be undertaken by private parties as long as there are no unnecessary legal hurdles. Extensive preapprovals by EPA, state, local, or even public interest groups will delay or even prevent such voluntary actions. API recognizes that there is a legitimate interest in preventing voluntary cleanup from becoming a loophole that impedes sound response action, but we believe that the private sector must be encouraged to participate with equitable and fair rules. The early history of CERCLA recognizes that a majority of these sites came into being because there was insufficient knowledge about proper waste disposal, not intentional misconduct.

5. Cleanup standards

Mandatory national standards would impede voluntary cleanup. API supports an approach that allows EPA to take into account the broad range of variables that could apply to each cleanup situation. We believe that legislation should not specify cleanup standards but should instead establish guidelines for regulatory action.

Currently, CERCLA does not directly specify standards, but rather directs EPA to establish cleanup methods and criteria for determining the extent of cleanup within the National Contingency Plan. Under this plan, for each Superfund site, EPA must analyze several cleanup options for their cost and effectiveness. EPA then must choose the alternative that will most efficiently protect health and the environment. We believe that this approach allows EPA to deal effectively with most releases.

For example, general guidelines can appropriately take into account the broad range of variables that apply to groundwater characteristics and use (i.e., proximity to population, hydrogeological setting, existing quantity and quality of persistence and solubility of pollutants). Because of the many differences between aquifers, specifying mandatory national cleanup standards in legislation (as was proposed by the House in 1984) would lead to an inflexible, impractical, and needlessly expensive program.

Our support of guidelines for regulatory action instead of specified cleanup standards is premised on the use of best available science, objective analyses of risk reductions associated with remedial actions and a balancing of risk reduction and costs. Society's resources are scarce and should be used in ways that produce the greatest benefits to society.

Public compensation

The objective of hazardous waste cleanup would be harmed—not helped—by proposals such as victims compensation that would redirect Superfund expenditures away from the goal of hazardous waste cleanup.

Establishing a program such as victims compensation within the Superfund would undermine the fund's basic rationale of dedicating revenue to a specific need—the cleanup of abandoned hazardous wastes.

Last year, the House approved a measure containing provisions that would have diluted the proportion of Superfund resources devoted to hazardous waste cleanup. A public compensation function was considered and rejected. It would have placed a serious drain on the Superfund program.

This year, the Senate Committee on Environment and Public Works has reported a bill, S.51, which provides for a victim assistance demonstration program. We believe this would be a bad precedent. Programs of this sort are often started as pilot projects, costing little—but end up as national efforts costing billions.

Under Section 129 of S.51, a five year test program would be created in which five to ten communities deemed to be at "increased risk" of some disease or injury from the release of a hazardous substance would have their medical screening and treatment insured by Superfund—when responsible parties have not undertaken to pay. During the initial demonstration phase, $30 million per year in Superfund monies would be set aside for this purpose.

Congress should consider the implications of this demonstration program if the program were to be extended in future years beyond what is contained in S.51. Proposals for those types of public compensation schemes rest on the assumptions that widespread health risks result from exposure to hazardous substances; that there is a general failure of individuals and society to provide compensation for the costs of chronic illness; and that the potential for explosive growth in the program's cost can be kept under control. The evidence now available does not support any of these assumptions. Furthermore, the seeds for explosive growth in program costs are already apparent in Section 129 of S.51.

NO WIDESPREAD HEALTH RISKS FROM EXPOSURE TO HAZARDOUS SUBSTANCES

Available evidence from the scientific community suggests that hazardous wastes are not a primary source of chronic illness in the United States. To the contrary, average life expectancy has been improving steadily and the overwhelming weight of scientific evidence suggests that the primary causes of cancer, the most prevalent chronic illness, are related to factors other than environmental exposure to hazardous substances.

According to a report, "Health, United States, 1984" released on March 22, 1985 by the U.S. Department of Health and Human Services, the overall life expectancy in the United States increased by four years between 1970 and 1983, a greater increase than in the previous two decades.

Testimony prepared for Congress in 1984 by Dr. Philip Cole of Epidemiology Resources Incorporated debunked the popular perception that the health of Americans is deteriorating and that cancer, for example, is on the rise. Dr. Cole noted that life expectancy has increased steadily in the United States during the 20th century, primarily because of a reduction in chronic disease mortality rates among adults. Dr. Cole added that cancer rates, other than those due to smoking, are stable or slightly declining. He expressed the view that diet, smoking and other aspects of "lifestyle" are the most important known causes of cancer—far more important causes than occupational and environmental exposure to hazardous substances.

The role of diet in causing cancer was recently explored by Dr. Bruce Ames, chairman of the Department of Biochemistry, University of California in Berkeley, in an article in Science magazine. Dr. Ames discussed the increasingly persuasive evidence that carcinogens naturally present in certain foods may play a significant role in causing cancer. He pointed out that "human dietary intake of nature's pesticides is likely to be several grams per day—probably at least 10,000 times higher than the dietary intake of man-made pesticides." He concluded that "diet, which provides both carcinogens and anti-carcinogens, is extremely likely to be another major risk factor" (in addition to tobacco).

A number of other scientific and medical reports in recent years have implicated fatty diet as a major culprit in heart disease and cancer. Additional reports have linked alcohol consumption to certain types of cancer. As a result, the U.S. Health and Human Services Department has recently established an information program to persuade Americans to eat fewer fats and oils and more fiber, to limit their alcohol intake and to give up tobacco, with the goal of cutting cancer deaths by 25 percent by the year 2000. That is a modest goal—the best scientific estimates suggest that nearly 70 percent of all cancers can be attributed to tobacco, diet and alcohol.

In 1981, Sir Richard Doll, an internationally recognized physician and epidemiologist, and his associate, Richard Peto, found that the best estimate is that occupational exposure accounts for about 4 percent of all cancer-related deaths and environmental pollution for less than 2 percent. Similar estimates were published in 1981 by the Congressional Office of Technology Assessment.

WIDESPREAD COMPENSATION FOR CHRONIC ILLNESS COSTS NOW EXISTS

There does not appear to be any overwhelming failure of individuals and society to provide compensation for the costs of chronic illness. Through a wide variety of public and private means, about 85 percent of the U.S. population is insured for both loss of income and medical expense due to chronic disease—regardless of the source of the illness.

These programs include private health insurance, Medicare, Medicaid, Social Security Disability Insurance, the federal Supplemental Security Income Program, workers compensation programs, private disability and life insurance, and specialized programs such as the black lung and harbor workers' and longshoremen's programs, veterans benefits, federal employees compensation and others.

It would be bad public policy to create a national health program under Superfund to cover the very small percentage of the population which may not have some form of primary medical coverage. With the government providing "free" coverage under Superfund, there may be less incentive to continue private coverage. Existing insurers could declare their coverage to be secondary to Superfund insurance. Thus, the demonstration program would likely become the primary coverage for all diseases in designated areas.

POTENTIAL FOR RUNAWAY PROGRAM COSTS

National experience with health or injury compensation funds shows that costs often grow out of control. For example, the Black Lung program—originally intended to compensate underground coal miners afflicted with certain employment-related lung diseases—was amended in ways that gradually eroded any requirement for meaningful evidence that the illness was caused by coal mine employment. As a result, the program expenditures by 1981 had grown more than 33 times the original projection and now cost $2.5 billion a year. A 1982 General Accounting Office report to Congress stated that in 84 percent of the approved claims, medical evidence of black lung disability or death was either nonexistent, inconclusive or conflicting.

Similarly, in 1927 Congress passed the Longshoremen's and Harbor Workers' Compensation Act to compensate maritime employees injured on the job. The act has been amended 12 times since 1927, with major changes in 1972 that substantially increased and extended benefits and coverage. From 1972 to 1982, expenditures for this program grew more than 700 percent—from $43 million to $355 million. The costs of this coverage have grown to be nearly as expensive for the employer as the average longshoreman's wage and resulted in increasing difficulty for employers to obtain insurance. In 1984, Congress—recognizing the need to reverse direction—amended the Act to reduce or eliminate certain benefits. For example, Congress excluded office clerical workers from coverage; repealed death benefits for compensated workers who die from causes unrelated to their occupational illness; and, in an effort to limit fraud, established a list of physicians who submitted false statements or charged excessive fees.

The potential for runaway costs in a broad hazardous substance fund would be even greater. Most hazardous substance fund proposals could apply to anyone alleging exposure in any way—in other words, virtually anyone in the nation. Thus, an enormous number of claims could be allowed—involving cases of disease having little or no connection to hazardous substances.

S. 51 CONTAINS THE SEEDS FOR RUNAWAY COST INCREASES

Under Section 129, everyone would be paid within a certain geographic boundary for medical screening, and the costs of what could be a broad range of illnesses associated in some way with a release. Lifestyle and workplace factors that might have played a role in any individual's medical condition would not be taken into account. As such, this is a national demonstration health insurance program financed out of Superfund.

An important reason why the costs of any public compensation scheme increase over time is the inability of medical science to determine whether exposure to hazardous substances caused particular cases of disease, rather than other factors such as lifestyle. Without a legitimate and clearcut way to identify cause-and-effect, virtually everyone who suffers chronic illness can point to prior exposure and thus make a claim.

Congress took cognizance of this problem when it mandated research on the relationship between toxic substances and disease. Until more information is available from those Congressionally mandated studies required under CERCLA, the medical care and screening in public health emergencies provided for in the existing law is adequate. Medical assistance is now available under Section 104(i)(4) and (5) of the existing CERCLA.

Section 129 would necessarily resort to arbitrary rules. For example, the demonstration program would pay benefits on a geographic "cluster" basis but what street would mark the cutoff? What about former residents? How long a residency would be required for individual eligibility?

The health care of the nation is important. But it would be wrong to create a massive back door national health care or insurance program under the regime of Superfund. Consideration of national health care and national, disability and life insurance issues should be debated as such—not under this legislation.

Mr. HEFTEL. Mr. Forney.

STATEMENT OF ROBERT C. FORNEY, EXECUTIVE VICE PRESIDENT, E.I. DU PONT DE NEMOURS & CO., ON BEHALF OF THE CHEMICAL MANUFACTURERS ASSOCIATION

Mr. FORNEY. Thank you, Mr. Chairman.

My name is Robert Forney. I am an executive vice president of the Du Pont Co., and a member of the board of directors of the Chemical Manufacturers Association for whom I am appearing here today.

We have submitted a written statement for the record, and I would like to confine my remarks to just six points on each of which I will have some 30 or 40 seconds of comments.

Mr. HEFTEL. Your full statement will be made part of the record.

Mr. FORNEY. Thank you.

First of all, the Chemical Manufacturers Association believes that Superfund should be reauthorized and at a level approximately three times the level it has been, at a level the administration says the funds can be efficently spent.

You have heard those words already said here this morning and the only thing I will add to Mr. Thomas' very eloquent testimony on that subject is that as taxpayers in general in this country, we do not need any more taxes for uses for which the funds cannot be efficiently spent.

Second, the scope of the fund. This fund was set up to clean up abandoned toxic waste sites. If we are to avoid sitting here 5 years from today, and wondering why this program did not make more progress during these 5 years, we have got to keep it confined to this purpose, and not add victims assistance, the Lautenberg type of amendments, or other things which will divert the purpose of the fund from its basic direction.

Third. We believe the fund should be funded at $1 billion, approximately per year level, from four sources. Continuation of the present feedstock tax that is approximately $307 million a year; addition of a dry weight waste end tax at $50 per dry weight ton to raise approximately the same amount of money; the use of general revenues to raise a little less than $200 million a year; and an aggressive program of cost recovery in connection with sites that have been cleaned up using Superfund moneys, where there are responsible parties out there to raise the remainder.

Fourth. With respect to the level of Superfund feedstock taxes, which this committee and your House has looked at in some detail in the past, the feedstock tax must not be increased above its present level of $300 or so million.

The petrochemical industry which bears most of this tax—it is between Mr. DiBona's and my industry, if you will—is very badly depressed. Its last year of real profitability was 1981, the first year of operation under Superfund, and no significant moneys have been made since. It accounts for virtually all the loss in trade balance for the chemical industry that has occurred over the past 3 or 4 years.

We cannot further disadvantage this industry in foreign trade by taxing it further.

Fifth, the waste end tax, which we favor on a dry weight basis, and at $50 a dry weight ton, should not be imposed on the basis that the administration and others have proposed—on a wet weight basis.

There is no question in our mind but what dry weight can be handled and handled very readily from a technical standpoint.

It is being done every day today, under Superfund, with the post closure tax that was enacted as a part of Superfund 5 years ago.

There is no question but what this can be done and that it will raise the approximately $300 million that we recommended.

And finally, to the extent that these taxing mechanisms that I have described do not raise sufficient funds, or that the Congress enacts a Superfund bill that is above the size that we have recommended, we too would recommend a broad-based tax, a so-called manufacturers environmental excise tax. Of the several types of bills that have been proposed for this purpose, the one that has been proposed in the other House by Senators Bentsen and Wallop comes closest to meeting the criteria for any such broad-based tax, which are enumerated on pages 17 and 18 of my written testimony. Thank you very much, Mr. Chairman.

[The prepared statement follows:]

STATEMENT OF ROBERT C. FORNEY, EXECUTIVE VICE PRESIDENT, E.I. DU PONT DE NEMOURS & CO., ON BEHALF OF THE CHEMICAL MANUFACTURERS ASSOCIATION

EXECUTIVE SUMMARY

1. Although the chemical industry overall is moderately healthy, certain sectors, particularly petrochemicals, are in serious trouble and the industry's world trade position is deteriorating.

2. Superfund taxes impede competitiveness of sectors of the industry, particularly petrochemicals.

3. Adequate revenues for Superfund can be raised without unduly damaging U.S. industry.

4. CMA supports a 5 year reauthorization of Superfund at an annual funding level of up to $1 billion. To raise these revenues, CMA supports a funding mechanism that would provide:

Continuation of the present Superfund feedstock taxes at current rates to provide $307 million per year;

Enactment of a national tax on the disposal of hazardous waste at $50 per dry weight ton, or equivalent to produce $307 million per year;

General revenues contributions of about $175 million per year;

Cost recoveries and interest on unexpended fund deposits to provide just over $200 million per year.

Expanded EPA borrowing authority against future cost recoveries.

To the extent that this funding mechanism does not yield a fund of the size authorized by Congress, CMA supports a broad-based tax to make up the difference. Judged by our criteria, the broad-based tax of Senator Bentsen and Senator Wallop in S. 957 represents an excellent foundation for this Committee to develop a broad-based tax for Superfund.

STATEMENT

The Chemical Manufacturers Association is a non-profit trade association whose member companies represent more than 90 percent of the productive capacity for basic industrial chemicals in this country. In several appearances before congressional committees since November of 1983, we have stressed both our strong support for an effective national program to clean up problem waste sites, and our commitment to play a cooperative and constructive role in the process leading to reauthorization of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), more commonly known as Superfund.

On May 1, 1985, CMA submitted its views on Superfund reauthorization to the House Committee on Public Works and Transportation. That statement, which presents this Association's views on both funding and the broad scope of issues raised by the reauthorization of Superfund, is attached hereto as "Appendix A".

CMA Superfund proposal

CMA supports a 5 year reauthorization of Superfund at an annual funding level of up to $1 billion. To raise these revenues, CMA supports a funding mechanism that would provide for (1) continuation of the present Superfund feedstock taxes at current rates to provide $307 million per year; (2) enactment of a national tax on the disposal of hazardous waste at $50 per dry weight ton or equivalent to produce $307 million per year; (3) support from general revenues contributions of about $175 million per year; (4) and cost recoveries and interest on unexpended fund deposits to provide just over $200 million per year. EPA projects that cost recoveries in the early years of this period will be below the $210 million level, but will build gradually to an amount in excess of $300 million per year. To provide level funding over the 5 year period, CMA proposes that EPA be given authority to borrow against amounts which will eventually be paid as cost recoveries.

We recognize, with the concern over the federal deficit, Congress may be reluctant to make general revenues available for Superfund. To the extent this occurs or for any other reason the items described above—feedstock and waste-end taxes, general revenues, cost recovery and interest—do not yield a fund of the size eventually authorized by Congress, CMA supports a broad-based tax on manufacturers to make up the difference.

Fund size and scope

Our testimony will focus primarily on the funding aspects of reauthorization. Before examining the impact of CERCLA taxing mechanisms on the chemical industry, however, we would like to discuss briefly the fund size issue. As stated previously, CMA supports reauthorization of Superfund at a level of up to $1 billion per year, the amount that EPA says it can spend effectively. We do not believe that the problem of cleaning up inactive hazardous waste sites will be solved by putting more money in the Superfund program than can be used effectively.

Among the programmatic aspects of the various legislative proposals that impact funding needs, three are of particular importance—the type of sites which Superfund can address, victims assistance programs and the provisions on health-related activities.

First, we need to keep Superfund focused with respect to the types of sites it can address. Except in major emergencies, the statute should not be used to address such concerns as releases resulting from mining wastes or the lawful application of pesticides; releases from residential, business or community structures not due to hazardous waste facilities; releases of naturally occurring substances in their natural form; releases covered by and in compliance with permitted discharges, or releases of pollutants and contaminants. In this respect we commend the approach taken in the Administration's Superfund reauthorization bill, H.R. 1314.

A second aspect of some legislative proposals that will, if enacted, divert resources from waste site cleanup is the provision of funds for victim assistance. We are concerned that such proposals could develop into an uncontrollable entitlements program that would be extremely costly for the nation.

We call to the attention of this Committee a report prepared by a scientific panel of Universities Associated for Research and Education in Pathology (UAREP). This report, the first comprehensive study of the health effects on populations around waste sites, concluded "There is little scientific evidence that chemical disposal sites have had serious effects on the health of populations living near them." UAREP nevertheless strongly urges prompt remedial action to reduce the potential for health effects. The results of the UAREP study raise fundamental doubts about the need for a new federal program to compensate persons allegedly injured by waste sites and reinforces the need to move promptly on site cleanup.

The third program that may have an impact on fund requirement is the authorization of monies for health studies and related research. Such provisions should be given careful scrutiny in terms of their effect on the availability of resources for waste site cleanup.

Superfund taxes and the chemical industry

We are pleased that members of this Committee and the Congress have expressed concern about the impact of increased Superfund taxes on the chemical industry. This industry has been facing serious challenges from several forces over the last decade, including increasing product costs and aggressive foreign competition. Increasing the current CERCLA feedstock tax rates, as has been proposed, would produce severe, adverse economic consequences and would impose even greater competitive pressures on the industry in the international arena. Moreover, ill-advised waste-end taxes of the type included in the Administration's bill would exacerbate the undesirable effects of the feedstock tax on the chemical industry.

To illustrate the possible impact of various funding mechanisms on the chemical industry, we would like to discuss the overall health of the industry, trends in international trade of chemical products—particularly the petrochemical sector, and the specific economic impact of funding proposals.

The chemical industry is the third largest of the manufacturing industries in the United States. It provides raw and intermediate materials that are used to make 63,000 commercial products for agriculture, business and individual consumers. It supplies products to such diverse customers as the mining, ceramics, primary metals and paper industries. The diversity of the industry is further shown by its production of synthetic rubber, fertilizers, pesticides, dyes, man-made fibers, and plastics. The industry uses as raw material and fuel about 6.7 percent of the nation's liquid petroleum consumption and over 10 percent of its natural gas consumption.

The U.S. chemical industry overall has been moderately successful in adjusting to such major challenges as the great change in energy and petroleum-based raw materials pricing since 1973, an overvalued U.S. dollar and the high level of investment around the world in competing chemical facilities. Sales amounted to $211.3 billion in 1984, and have shown an average gain of 7.4 percent per year in the last five years. Volumes produced have gone up at an average rate of 1.6 percent per year over the same period. The industry has increased capital expenditures about 7.4 percent per year over the last five years. With a strong emphasis on productivity, employment has declined from a peak of 1,109,000 in 1981 to 1,061,000 in 1984. The industry continues to invest in innovation as reflected by an average annual increase of 16.4 percent in spending for research and development.

Trends in international chemical trade

The overall performance of the industry is clouded, however, by the poor performance of some sectors of the industry under current world trade conditions. This is illustrated by trends in the chemical industry trade balance. The industry has typically exported a significant part of its production. But the share of sales going abroad dropped from 11.7 percent in 1981 to 10.6 percent in 1984.

The industry is losing its competitive position versus foreign products in both domestic and export markets, and, therefore, the contribution of the industry to the nation's trade balance is declining. The record $14 billion chemical surplus in 1981 declined 26 percent to $10.3 billion in 1984. This has serious implications for the U.S. overall trade balance which had a deficit in 1984 of $123 billion.

The most distressed sector of the chemical industry and the one particularly influenced by international competition is petrochemicals. This sector is a major industry in its own right. The Department of Commerce's 1985 U.S. Industrial Outlook reports petrochemical shipments totalled $90.6 billion in 1984. The petrochemical sector makes the primary basic building block or "feedstock" chemicals which are used to make derivative products (Exhibit I). The petrochemical feedstocks taxed under Superfund fall into this category. Producers of these petrochemical feedstocks are losing export and dometic markets and many are losing money on these products.

A 1982 report prepared by the U.S. Department of Commerce predicted a pessimistic future for petrochemicals.[1] The report projected a gradual decline in the competitiveness of the U.S. petrochemical industry as hydrocarbon rich countries, including the Persian Gulf states, Canada, Mexico and Indonesia, bring new capacity onstream. This new capacity will lead to a major restructuring in the worldwide petrochemical industry which, the report says, is already underway and will gain momentum in the next two decades.

Petrochemical imports have grown 83 percent in the period 1981–1984. As a consequence, the positive petrochemical trade balance declined from $8.8 billion in 1981 to $5.5 billion in 1984, a drop of 38 percent. Thus, virtually the entire decline in the chemical industry trade balance from 1981–84 is attributable to petrochemicals ($3.3 billion of a total $3.7 billion). The petrochemical share of the overall chemical trade balance has declined over that same period from 63 percent to 53 percent. These and other measurements show that this segment of the industry is under severe competitive pressure throughout the world.

We emphasize that although the petrochemical industry is severly distressed, there are many operations in this industry that are capable of competing in world markets, if provided a reasonably favorable climate. The jobs and products represented by these businesses are substantial, and we should attempt to preserve those that are efficient enough to compete. It is particularly important not to impede this industry further by imposing on it domestic burdens not borne by foreign competitors.

Feedstock taxes damage U.S. competitiveness

Increased Superfund feedstock taxes would seriously aggravate the deteriorating condition of the U.S. petrochemical industry. In this highly competitive industry, newly imposed costs, whether raw materials, labor, construction costs, or Superfund taxes, cannot be passed through to the consumer in the export or U.S. market. Petrochemical prices are determined by competition, not by costs. Many foreign competitors selling in export markets, including the United States, are using natural gas and other feedstocks as a raw material at ⅙ the cost of that in the United States. Even allowing for higher transportation costs to export markets, U.S. producers have great difficulty in being competitive both here and abroad.

The petrochemical feedstocks taxed under Superfund are generally not significant in world trade. However, their downstream derivatives, which for integrated producers in the U.S. are burdened with feedstock taxes, are traded in large volumes. Ethylene is a good example. The U.S. International Trade Commission reports that ethylene production in 1983 accounted for over 13 percent of all the petrochemicals manufactured. Over the first two and one quarter years of CERCLA taxation, 40 percent of the petrochemical feedstock tax was paid on ethylene. Ethylene, however, is exported in the form of downstream products such as ethylene glycol or polyethylene resins. These products are competing against foreign products manufactured from feedstocks on which no tax is assessed.

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[1] U.S. Department of Commerce, "A Competitive Assessment of the U.S. Petrochemical Industry" (August 31, 1982).

The same factors apply in the U.S. market. It is almost always the feedstock derivatives that are imported, not the taxed petrochemical feedstocks. U.S. purchasers of the derivatives can buy them from either domestic or foreign producers. The U.S. producer of these downstream products finds it is, therefore, prevented from passing through the cost of feedstock taxes because of competition from untaxed foreign producers.

Recent price trends of the taxed feedstocks provide further evidence of the inability of manufacturers to pass through Superfund taxes. According to a study done for CMA by Price Waterhouse & Co., average prices for taxed petrochemical feedstocks were 25.1¢/pound in 1981, 20.1¢/pound in 1982 and 19.7¢/pound in 1983. Data from the Bureau of Labor Statistics indicate that, in 1984, this price has continued to decline to the 17-18¢/pound range.

Under these conditions, even the present level of feedstock taxes undermines the competitiveness of the petrochemical sector. It is, therefore, extremely important that petrochemicals not be burdened with taxes higher than those in the present law. These taxes are cumulative with other cost factors affecting the industry's international competitiveness.

A group of 31 inorganic feedstock chemicals is also taxed by CERCLA. The trade situation for these commodities is similar to that in the petrochemical sector. The majority of these inorganic chemicals are contained in two SIC codes, (SIC 2812 and SIC 2819). Since 1980, the positive chemical trade balance for these two product sectors, including untaxed inorganic products, has dropped 31 percent from $727 million to $503 million. Prices for these inorganic feedstocks are also under pressure. The average prices were 7.6¢/pound in 1981, 7.7¢/pound in 1982 and 7.0¢/pound in 1983. New taxes imposed on these products would not be passed through to customers. As in the case of petrochemicals, inorganic chemicals should not be burdened with taxes higher than those in the present law.

Feedstock taxes cannot be shifted to profitable sectors of the industry. In this nation's industrial economy, each product or group of products must be self-sustaining. Those that are not must be shut down. No company could serve well its employees or shareholders if it permitted an unprofitable line of business to reduce the overall competitiveness of the organization. The Congress is urged to consider fully the economic position of individual chemicals before imposing new costs on them.

Economic impact of Superfund feedstock taxes

In order to gain a more quantitative insight into the economic health of relevant sectors of the U.S. chemical industry and of the impact of Superfund taxes, a survey of 26 major producers of nine of the presently taxed petrochemical and inorganic feedstocks was just completed by Price Waterhouse & Co. Pre-tax earnings in the petrochemical sector were found to be negligible while those in the inorganic sector showed a significant decline.

The survey shows (Exhibit II) the distressed state of earnings for the surveyed petrochemical feedstocks and the serious downtrend of earnings for 31 inorganic feedstocks.[2] The serious condition for the petrochemicals is depicted on Exhibit III. The 1982 losses on the nine petrochemical feedstocks amounted to $91 million which increased to a loss of $188 million after estimated CERCLA taxes. Similar results with a loss of $100 million were obtained in 1983 despite an improvement in business conditions.

Pre-tax operating earnings for the 31 taxed inorganic products are somewhat better, but have declined from $415 million in 1981 to $220 million in 1983, a 47 percent decrease. The earnings to sales ratio declined from 13.4 percent in 1981 to 6.9 percent in 1982, and to 6.8 percent in 1983. This is not an acceptable rate of return. Imposition of higher Superfund taxes would only worsen this trend.

A study by DeWitt and Company, confirming the difficult situation for U.S. petrochemical producers, points out that profit margins in 1982 and 1983 were negative.[3] Much U.S. petrochemical capacity has been retired, and a substantial amount of existing capacity is in danger of being permanently shut down if new Superfund tax levels like those in H.R. 5640 last year are imposed. Thirty thousand petrochemical jobs would be lost. Another 120,000 jobs would be at stake that are dependent on petrochemical jobs. This trend is confirmed by Bureau of Labor statistics which show that 43,000 petrochemical jobs were lost in the period 1979 to 1983 and that many more are threatened by worldwide competition.

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[2] Price Waterhouse, "A Comparison of Sales to Earnings Ratios for Chemical Companies for Their Overall Sales and Sales of Products Subject to CERCLA Taxes" (March 15, 1985).

[3] DeWitt and Company, "Superfund Economic Impact (July 17, 1984).

Waste-End taxes

As mentioned above, CMA has proposed a $50 per dry weight ton waste disposal tax intended to raise $307 million dollars per year. Some part of this tax must be borne by the already taxed feedstock products, and they would be disadvantaged additionally in export and domestic markets. Nevertheless, CMA has supported such a tax since it is reasonably related to the purpose for which the money is needed and, in addition, more equitably expands the base of taxpayers to other industries involved in hazardous waste sites. We believe that the Hall-Fields bill, H.R. 2208, contains an equitable waste tax proposal. Although the tax are specified on a wet weight basis, an alternative dry weight computation is provided at the acceptable rate of $50 per ton.

However, some proposed waste taxes would only aggravate the inequity of the current feedstock taxes. For example, the Administration's bill, H.R. 1314, would tax waste management rather than disposal and, in particular, would tax highly dilute waste water in certain treatment facilities. Even at the revised tax rates, a tax structure which imposes a tax on dilute waste water would seriously penalize a few companies that have large waste water treatment facilities. These facilities were installed at great expense to provide environmentally sound waste management. Such a tax makes no economic or environmental sense. It would force companies, such as Du Pont, to make unproductive investments in alternative waste handling units to avoid the tax with no environmental gain whatever.

Similarly flawed are the Sikorski bill, H.R. 2022, which would attempt to raise $800 million per year, and the Schneider bill, H.R. 2018, which would raise about $650 million (far more than the stated $286 million level because the rates are too high). Both bills tax waste treatment and disposal facilities on a wet-weight basis.

There is yet another strong reason to oppose these waste management taxes. One central justification for adopting a waste tax is to distribute the Superfund tax burden throughout the economy to all who have contributed to problem sites, rather than to concentrate that burden on two or three industry groups. Although the Superfund tax payments of many companies would be increased under these proposals, a disproportionate burden of the total Superfund taxes would continue to fall on the chemical industry because of its highly aqueous waste streams and heavy reliance on waste water treatment facilities.

CMA, thus, strongly opposes these efforts to tax waste water as highly inequitable and exacerbating the effect on trade of existing feedstock taxes.

Need for general revenues

As stated above, CMA's proposed funding mechanism includes a general revenue component of about $175 million per year. We believe that a substantial general revenue contribution is appropriate for reasons of equity and sound public policy. The chemical industry's contribution to the Superfund far exceeds our contribution to problem waste sites. This inequity will worsen if general revenues are not provided.

The problems associated with inactive hazardous waste sites reflect more than 100 years of industrial development in the nation. Hazardous wastes have been, and will continue to be, generated by a wide range of industries, business concerns, government agencies and defense installations, municipalities and scientific facilities. The problem is societal in scope and the mechanisms for coping with it should reflect this fact, just as the benefits of resolving the problems will inure to all elements of the country. As Congress recognized when it enacted Superfund in 1980, only through the use of general revenues, both state and federal, can this societal responsibility be fairly discharged.

The Treasury has already acknowledged that broadening the Superfund tax base is best achieved by continuing substantial general revenue contributions as a part of the Superfund funding mechanism. Testifying before the Senate Finance Committee last September, Mikel Rollyson, Tax Legislative Counsel of the Treasury Department, stated in answer to the questions of Senator Bentsen:

Mr. ROLLYSON. * * * "But I think to respond to your point, and also to respond to our concerns about the administrability of the tax, if the committee is interested in looking at a significantly broadening of the base for this tax, which I think is one of the principal concerns.

Senator BENTSEN. You have heard it around this table.

Mr. ROLLYSON. Then I think that broadening is better obtained by, in effect, larger appropriations from general revenues.

* * * * * * *

So I would suggest that if you are interested in a great expansion or broadening of the base for the tax, that you would consider seriously looking hard at larger shares of general revenues."

Broad based taxes

CMA believes that the chemical industry should not bear either feedstock or waste-end taxes beyond those levels recommended above. Thus as stated above, we support the use of a broad-based tax on manufacturers to make up any shortfalls from feedstock and waste-end taxes, general revenues, cost recovery and interest.

CMA has been working closely with the American Petroleum Institute (API) and the staffs of several members of Congress to develop the concept of a broad-based invoice-type transaction tax for Superfund which we call the Manufacturer's Environmental Excise Tax ("MEET"). CMA agrees with API that "MEET" would be an acceptable broad-based tax to our member companies. But our approval of "MEET" should not preclude the consideration of other alternatives that would satisfy our basic criteria of a broad-based tax.

CMA believes that any broad-based tax to finance the Superfund program should be tested under the following basic criteria:

Revenue potential

The proposed tax should provide predictable and adequate levels of revenues to finance the cleanup of problem waste sites.

Equity

The tax must be very broadly-based. EPA identification of responsible parties at National Priority List (NPL) waste sites has demonstrated that numerous industries, and over four thousand companies, have contributed waste to these problem sites. Fairness dictates that all these industries should also contribute to the cleanup of these sites through their tax payments.

Trade and economic impact

Any proposed tax should have a neutral or minimal impact on trade. The tax should not apply to exports. It should apply to imports or be imposed at such a low rate that it does not disadvantage domestic manufacturers with respect to imported products.

Avoidance of repetitive taxation of same transaction

The proposed tax should avoid any repetitive taxation of the same transaction ("cascading of tax payments").

Environmental nexus

Any proposed tax should have at least some environmental nexus with the problem waste sites for which the tax is required. Since a wide spectrum of manufactured products appears at problem waste sites, a tax that would apply broadly to manufacturing would supply the requisite environmental nexus.

Administrative feasibility, cost and number of taxpayers affected

The proposed tax should be simple and inexpensive to administer and to collect. We believe that a tax which applies to all manufacturers would not impose an undue administrative burden.

We submit that these are the basic criteria by which any proposed broad-based tax should be judged. Several members of the Senate Finance Committee have introduced bills to establish a broad-based funding mechanism for the re-authorization of Superfund. These include Senator Bradley (S. 596), Senators Mitchell and Chaffee (S. 955), and Senators Bentsen and Wallop (S. 957). We view the introduction of these bills as a positive development for several reasons: First, these bills reflect a growing congressional recognition that the Superfund site cleanup problem is a societal one and not merely a specific responsibility of the chemical and petroleum companies alone.

Second, these bills also reflect the recognition that the current badly depressed petrochemical industry should not pay increased taxes of the level needed to fund the Superfund site cleanup program for the next 5 years. Senator Bradley and Senator Bentsen would continue the present feedstock taxes at existing levels for an additional 5 years. Unfortunately, however, Senators Mitchell and Chafee in S. 955 would amend the feedstock taxes to raise an additional $100 million, which we oppose.

Third, all the bills recognize the need to develop a waste-end tax to raise a reasonable amount of revenue—$300 million per year. As mentioned, CMA supports the waste disposal tax proposed in the Hall-Fields bill, H.R. 2208, at the rate of $50 per dry weight ton or equivalent.

Fourth, all the Senate broad-based tax proposals emphasize the need to continue Federal general revenue contributions to the Superfund trust fund.

CMA appreciates the great difficulty in developing an appropriate broad-based tax alternative for Superfund. We believe, however, that judged by the criteria we have set forth above, the broad-based tax developed by Senator Bentsen and Senator Wallop in S. 957 is preferable to those provided in S. 596 and S. 955.

The Bentsen-Wallop bill would provide a simple, broad-based transaction tax at low rates. Since the tax applies to all manufacturers, it has the required environmental nexus. Moreover, the proposed tax is relatively trade neutral and free of "cascading" problems. CMA believes that S. 957 represents an excellent foundation for this Committee to develop a broad-based tax for Superfund.

EXHIBIT I

FLOW CHART - PETROCHEMICAL SOURCES TO END-USE APPLICATIONS

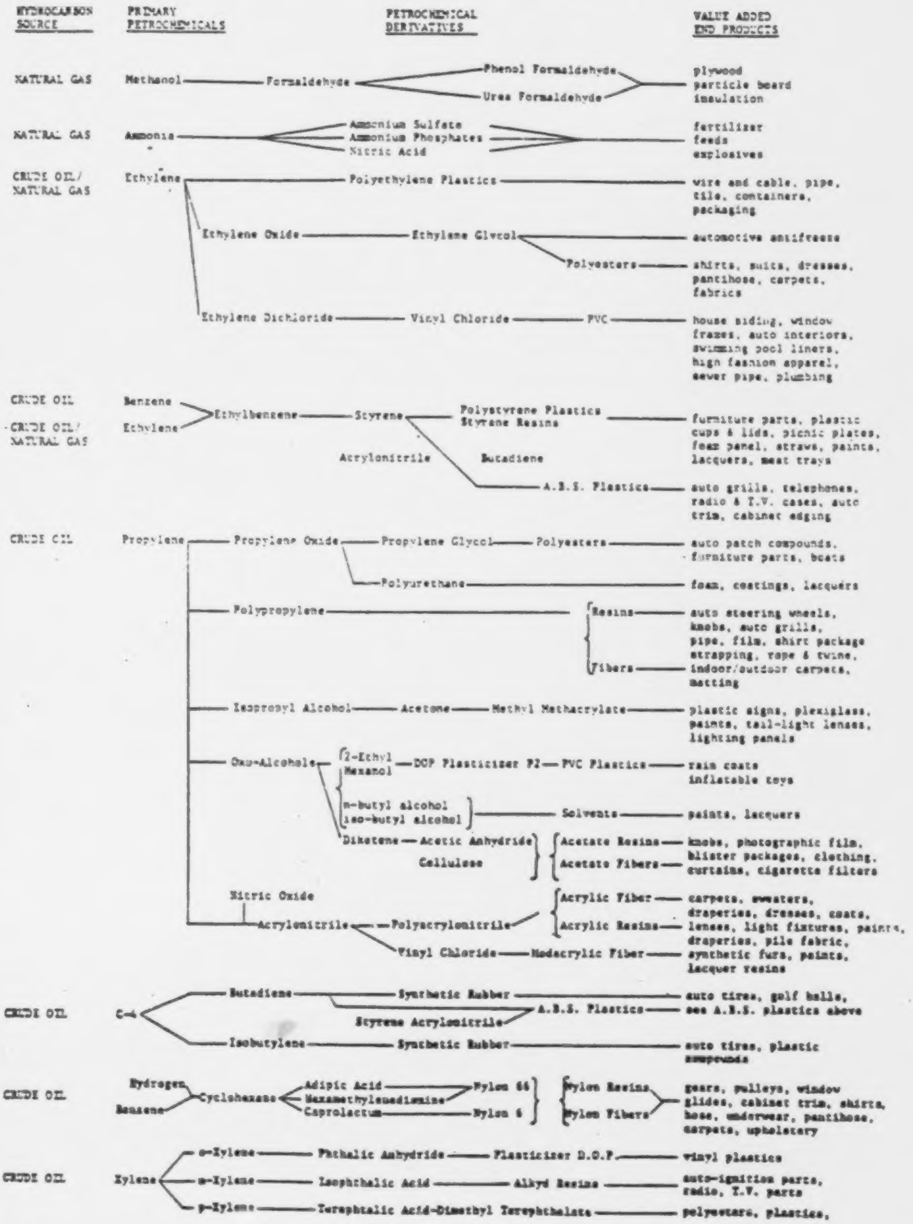

HYDROCARBON SOURCE
PRIMARY PETROCHEMICALS
PETROCHEMICAL DERIVATIVES
VALUE ADDED END PRODUCTS
NATURAL GAS
Methanol
Formaldehyde
Phenol Formaldehyde
Urea Formaldehyde
plywood
particle board
insulation
NATURAL GAS
Ammonia
Ammonium Sulfate
Ammonium Phosphates
Nitric Acid
fertilizer
feeds
explosives
CRUDE OIL/ NATURAL GAS
Ethylene
Polyethylene Plastics
wire and cable, pipe, tile, containers, packaging
Ethylene Oxide
Ethylene Glycol
automotive antifreeze
Polyesters
shirts, suits, dresses, pantihose, carpets, fabrics
Ethylene Dichloride
Vinyl Chloride
PVC
house siding, window frames, auto interiors, swimming pool liners, high fashion apparel, sewer pipe, plumbing
CRUDE OIL
Benzene
CRUDE OIL/ NATURAL GAS
Ethylene
Ethylbenzene
Styrene
Polystyrene Plastics
Styrene Resins
furniture parts, plastic cups & lids, picnic plates, foam panel, straws, paints, lacquers, meat trays
Acrylonitrile
Butadiene
A.B.S. Plastics
auto grills, telephones, radio & T.V. cases, auto trim, cabinet edging
CRUDE OIL
Propylene
Propylene Oxide
Propylene Glycol
Polyesters
auto patch compounds, furniture parts, boats
Polyurethane
foam, coatings, lacquers
Polypropylene
Resins
auto steering wheels, knobs, auto grills, pipe, film, shirt package strapping, rope & twine,
Fibers
indoor/outdoor carpets, matting
Isopropyl Alcohol
Acetone
Methyl Methacrylate
plastic signs, plexiglass, paints, tail-light lenses, lighting panels
Oxo-Alcohols
2-Ethyl Hexanol
DOP Plasticizer P2
PVC Plastics
rain coats
inflatable toys
n-butyl alcohol
iso-butyl alcohol
Solvents
paints, lacquers
Diketene
Acetic Anhydride
Cellulose
Acetate Resins
Acetate Fibers
knobs, photographic film, blister packages, clothing, curtains, cigarette filters
Nitric Oxide
Acrylonitrile
Polyacrylonitrile
Acrylic Fiber
Acrylic Resins
carpets, sweaters, draperies, dresses, coats, lenses, light fixtures, paints, draperies, pile fabric,
Vinyl Chloride
Modacrylic Fiber
synthetic furs, paints, lacquer resins
CRUDE OIL
C-4
Butadiene
Synthetic Rubber
auto tires, golf balls,
A.B.S. Plastics
see A.B.S. plastics above
Styrene Acrylonitrile
Isobutylene
Synthetic Rubber
auto tires, plastic compounds
CRUDE OIL
Hydrogen
Benzene
Cyclohexane
Adipic Acid
Hexamethylenediamine
Caprolactum
Nylon 66
Nylon 6
Nylon Resins
Nylon Fibers
gears, pulleys, window glides, cabinet trim, shirts, hose, underwear, pantihose, carpets, upholstery
CRUDE OIL
Xylene
o-Xylene
Phthalic Anhydride
Plasticizer D.O.P.
vinyl plastics
m-Xylene
Isophthalic Acid
Alkyd Resins
auto-ignition parts, radio, T.V. parts
p-Xylene
Terephtalic Acid-Dimethyl Terephthalate
polyesters, plastics,

EXHIBIT 2

A Comparison of Earnings to Sales Ratios of Chemical Companies for Their Overall Chemical Sales and Sales of Products Subject to CERCLA Taxes

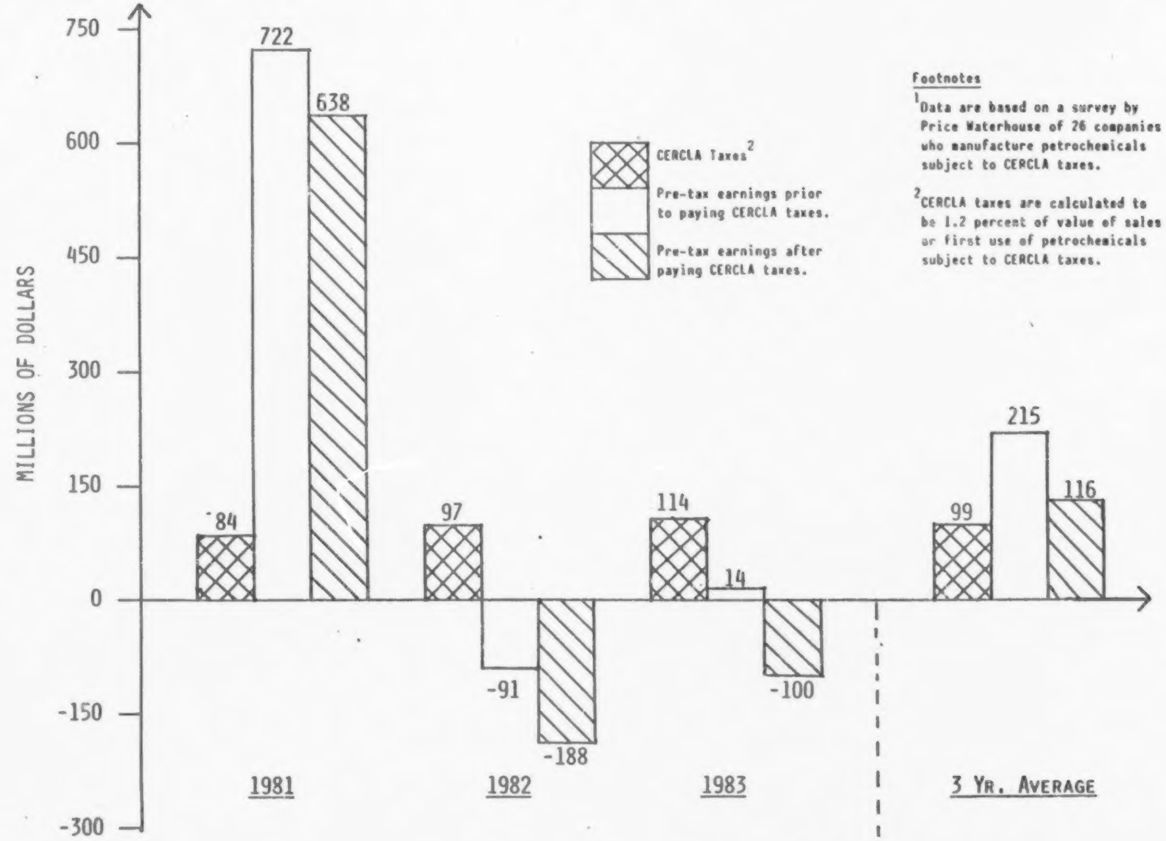
	1981		1982		1983	
	Pre-tax Earnings (mil $)	Chemical Sales (mil $)	Pre-tax Earnings (mil $)	Chemical Sales (mil $)	Pre-tax Earnings (mil $)	Chemical Sales (mil $)
Overall Chemical Sales[1] (Chemical & Engineering News)	6038	82365	2386	72138	4418	73725
Earnings to sales ratio (%)	7.33		3.30		5.99	
Petrochemical sales subject[2] to CERCLA taxes	722	8649	-91	8011	14	9194
Earnings to sales ratio (%)	8.35		-1.14		0.15	
Inorganic chemical sales subject[2] to CERCLA taxes	415	3094	227	3297	220	3214
Earnings to sales ratio (%)	13.42		6.89		6.85	

NOTE: [1] Overall chemical sales are total chemical sales for the 26 companies who responded to a CMA survey conducted by Price Waterhouse & Company as reported by Chemical & Engineering News, June 11, 1984. The companies were selected because of their large volume of production of products subject to CERCLA tax.

[2] Sales and earnings data are totals of the 26 companies responding to the CMA survey.

EXHIBIT 3

THE EFFECT ON PRE-TAX EARNINGS ON PETROCHEMICAL FEEDSTOCKS SUBJECT TO CERCLA TAXES[1]



Footnotes

[1] Data are based on a survey by Price Waterhouse of 26 companies who manufacture petrochemicals subject to CERCLA taxes.

[2] CERCLA taxes are calculated to be 1.2 percent of value of sales or first use of petrochemicals subject to CERCLA taxes.

Appendix A

STATEMENT OF GEORGE J. SELLA, JR., PRESIDENT AND CHAIRMAN OF THE BOARD, AMERICAN CYANAMID CO., ON BEHALF OF THE CHEMICAL MANUFACTURERS ASSOCIATION

The Chemical Manufacturers Association is a non-profit trade association whose member companies represent more than 90 percent of the productive capacity for basic industrial chemicals in this country. In several appearances before Congressional committees since November of 1983, we have stressed both our strong support for an effective national program to clean up problem waste sites, and our commitment to play a cooperative and constructive role in the process leading to reauthorization of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), more commonly known as Superfund. We are pleased to present our views on Superfund reauthorization.

We believe that Congress should reauthorize Superfund by (1) determining realistically what EPA's annual funding needs will be, and providing for such levels; (2) deriving these funds from more broadly based mechanisms than the tax structure of the current law; (3) providing this funding for a five-year period and re-examining needs at that time; and (4) re-enacting the current law with minor modifications.

We recommend that the Superfund tax be reauthorized at higher levels for the next five years. This higher level of taxation should be consistent with EPA's ability to manage these funds. EPA states that it can effectively spend about $1 billion a year over the next five years to clean up inactive hazardous waste sites. We support this level of funding. A fund of this size will enable rapid cleanup yet provide for efficient management of the program.

I. CMA PROPOSES A BALANCED MECHANISM TO FINANCE THE SUPERFUND SITE CLEANUP PROGRAM

We believe that an effective waste site cleanup program at a $1 billion a year level can be responsibly financed with a balanced combination of special industry taxes, general revenue contributions, cost recoveries from responsible parties, interest on trust fund accumulations, and standby borrowing authority. In brief, our proposal would extend the current Superfund feedstock taxes at current levels for an additional five years. Moreover, we propose that Congress adopt a new tax on the disposal or long term storage of hazardous wastes at rates equivalent to $50 a dry weight ton. These special taxes on industry would raise over $600 million annually. The balance of anticipated Superfund spending needs would be provided by general revenues, cost recoveries from responsible parties, interest and borrowing.

A. Feedstock taxes should be maintained at existing level

As we will discuss below, increased feedstock taxes will have a severe economic impact on the chemical industry. We recognize, however, that it is important to provide a stable base of funding for the CERCLA program for the next five years. CMA has, therefore, endorsed continuation of the feedstock tax, at current levels, for five more years. This would raise approximately $307 million per year.

1. Increased Superfund taxes would have a detrimental effect

We strongly object to Superfund tax proposals that would place almost the entire economic impact of cleaning up inactive sites on the chemical and allied industries. For sites or portions of sites without identifiable or solvent responsible parties, the cost must be borne by a much broader segment of society than simply the chemical industry. The many industries and businesses as well as federal, state and local governments involved in Superfund sites demonstrate the vast number of contributors to this nation's hazardous waste site problems.

For example, EPA's National Priorities List (NPL) of serious hazardous waste sites Final Rule, 1983, shows that the industry category of 49 percent of the disposers of hazardous waste at NPL sites is unknown. The study also shows that only 18 percent of the disposing companies are members of the chemical industry. Eleven other industries also are represented. Further, an examination of the NPL list by site owners shows that only about 15 percent are attributable to the chemical industry. Thus there is overwhelming evidence that many segments of industry and government contributed to this problem.

As we pointed out in our testimony in the last Congress, legislative proposals to increase CERCLA funding which rely principally on increasing feedstock taxes above the current rates would cause plant shutdowns, loss of export potential, lost jobs in the chemical industry and erosion of the tax base. CERCLA taxes at the current levels already are narrowly based, inequitable according to both EPA and Treasury Department analysis,[4] and so structured that the taxpayer must today absorb most or all of the tax rather than pass it along into the marketplace. The economic impact of CERCLA feedstock taxes has been to consume a substantial share of pre-tax earnings of the taxed chemical sectors. Increased CERCLA rates, such as those proposed in the House-passed version of H.R. 5640 in the last Congress, would exceed the pre-tax earnings of taxed petrochemicals and consume the majority of pre-tax earnings for inorganic chemicals. Competitive conditions already foreclose investment for new facilities to manufacture taxed chemicals. Loss of earnings would further jeopardize continued operation of existing chemical manufacturing facilities while threatening jobs and export potential.

Current CERCLA feedstock taxes are imposed by statute on 42 chemical substances and petroleum sold, used, imported or exported by 496 [5] taxpayers. However, the bulk of the chemical feedstock taxes is paid on eight petrochemical feedstocks (primary petrochemicals) and five inorganic chemicals and by less than 30 chemical manufacturers. Primary petrochemicals account for more than two-thirds of CERCLA taxes and 12 companies pay 70 percent of the taxes on these substances.

Moreover, the tax does not distinguish between hazardous and non-hazardous use of taxed chemicals, nor does it reflect the environmental risks of the taxpayer's waste management practices. Compared with the current CERCLA tax distribution of 70 percent to primary petrochemicals, that 70 percent share would diminish to 31 percent [6] if distributed in relation to those substances' contribution to waste problems in 691 Superfund sites on the National Priorities List analyzed by EPA in 1984.

CERCLA taxes are not passed through in the marketplace, further exacerbating their inequity and negative economic impact on narrow industry segments. Feedstock taxes were presumed by CERCLA's authors to be equitable because they were thought to be passed along in the manufacturing process to impact on all potentially hazardous substances. From the perspective of 1980 economic conditions that existed when CERCLA was crafted, pass-through might have been possible. For instance, primary petrochemical demand grew during the 1975–79 period at 2.4 times the GNP growth rate and industry was hard pressed to meet demand. Full cost recovery, including costs associated with new taxes were likely in that competitive environment of temporary shortages.

However, demand for petrochemicals from 1979 through 1983 decreased at 2.7 percent per year. This reduced demand, coupled with extensive new capacity installed in the 1979–80 period, led to worldwide overcapacity. Primary petrochemical prices dropped sharply and prices for foreign petrochemicals tended to set prices in foreign and domestic markets. The impact of these foreign prices capped prices for U.S. products and prevented pass-through of CERCLA taxes. That condition still exists today despite improvement of U.S. competitiveness through ongoing elimination of inefficient manufacturing facilities and increased manufacturing innovation. Prices have continued to drop and the Bureau of Labor Statistics indicates that some taxed chemical prices are 20 percent below January 1, 1985 levels predicted in Superfund legislation proposed late in 1984. This limiting effect of foreign prices is more fully explained in the foreign trade discussion later in this testimony.

The economic impact of CERCLA taxes has been to consume a large share of profits on the few chemicals subject to the feedstock tax. Increased feedstock tax rates to accommodate an expanded Superfund may eliminate earnings completely. CERCLA feedstock taxes have been equal to 1.2 to 1.4 percent of primary petrochemical sales value. Increasing the tax rates by 3.43 times, as proposed in EPA's Feedstock Tax Option I in its Section 301 study,[7] would increase taxes to 4 or 5 percent of product sales value on products whose pre-tax earnings as a percent of sales have generally been less than 4 percent of sales. Similarly, the feedstock tax approach of HR 5640, as passed by the House in 1984, would bracket a range of 4 to 6 percent of sales.

Projected taxes of this magnitude eliminate all potential for earnings on primary petrochemicals whose pre-tax earnings have frequently been negative and averaged less than 2.5 percent of sales value from 1981 to 1983 according to Price Waterhouse & Company.[8] Inorganic chemical earnings do not appear to be as vulnerable as those for primary petrochemicals but their earnings have decreased in three years to less than one-half pre-CERCLA levels. Expanded CERCLA taxes at indicated levels would consume more than 60 percent of potential earnings. The Price Waterhouse study confirms the findings of a 1984 study by DeWitt and Company which indicated that expanded CERCLA taxes would eliminate earnings on taxed petrochemical feedstocks. The DeWitt study further forecasted that those lost earnings would jeopardize continued operations of existing facilities on which 30,000 direct jobs and 120,000 jobs in related industries are dependent.[9]

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[4] EPA 301(a)(1)(G) study on pages ES–4; Testimony of Hon. Mikel M. Rollyson, Tax Legislative Counsel, before Senate Committee on Finance, September, 1984.

[5] IBID page 2–4.

[6] IBID page 4–9.

[7] IBID Exhibit 4–1, page 4–2.

[8] 1985 Price Waterhouse & Co. survey of sales value, pre-tax earnings and production of taxed petrochemicals and inorganic chemicals.

These economic impacts were confirmed by the Congress' Office of Technology Assessment (OTA) in a statement filed September 10, 1984 with the Senate Committee on Environment and Public Works.

2. Increased Superfund taxes would harm international competitiveness

The chemical industry in 1984 was the third largest manufacturing industry in the United States in terms of value of shipments. It also is one of the few sectors of the economy which has consistently exhibited a positive trade balance. That trade balance peaked in 1980 and has been declining since that time. Using the Department of Commerce's SIC classification (SIC 28—Chemicals and Allied Products), the chemical balance of trade has declined from $14 billion in 1980 to $10.3 billion in 1984, which represents a decline of 26 percent. There are segments of the industry, however, which have exhibited an even worse performance in declining trade balances.

During the 1980–84 period, the positive trade balance of the petrochemical industry as defined by the Department of Commerce [10] declined from $8.6 billion to $5.5 billion. Not only is this a drop of nearly 37 percent, but the petrochemical share of the overall chemical trade balance has declined over the period from 62 percent to 53 percent. When the $3.2 billion loss in petrochemical trade is compared with the $3.7 billion loss in trade balance for all chemicals, it becomes obvious that petrochemicals are a segment of the industry which is under severe competitive pressure in the international arena.

This statement has already addressed the erroneous assumption that the costs of a tax on feedstock chemicals could be passed through to the downstream derivatives. This difficulty of cost pass-through becomes even more apparent when chemical products in international trade are examined. The taxed feedstocks themselves have negligible trade. It is their downstream derivatives which enter into commerce.

The case of ethylene is a good example. Ethylene production in 1983 accounted for over 13 percent of all petrochemicals manufactured. Yet the exports of this material were virtually nonexistent, accounting for less than 0.01 percent of all petrochemical exports. Ethylene is exported as its downstream products such as polyethylene resins. Polyethylene resins are included in the Department of Commerce's petrochemical definition previously discussed. Downstream products such as these plastic materials enter international commerce, and are competing against products manufactured in countries where no feedstock tax exists. Accordingly, any attempt to pass through the cost of a feedstock tax would render U.S. downstream products less competitive.

A similar condition exists with regard to imports of chemicals. As in the case of exports, it is not the feedstock chemicals which are moving in international commerce, but their downstream derivatives. U.S. purchasers of these downstream products are free to buy either domestic or imported material. Once again, the U.S. producer of these downstream products is prevented from passing through the cost of the feedstock tax by competition from imported materials manufactured from untaxed feedstocks.

A group of 31 inorganic feedstock chemicals currently are also taxed by CERCLA. The trade picture for these commodities is much the same as it is for the petrochemical sector. The majority of these inorganic chemicals are contained in two SIC codes.[11] Since 1980, the positive chemical trade balance for these two product sectors has declined from $727 million to $583 million, a decline of 31 percent. The trade balance for these products had actually been increasing until 1982 when it reached $825 million. The $322 million decline in trade balance in the last two years represents a decline of 39 percent. The above arguments for difficulty of cost pass-through in international trade apply to these inorganic chemicals as they did for petrochemicals.

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[9] DeWitt & Company, "Superfund Economic Impact" (July 17, 1984).

[10] SIC 2821, 2822, 2824, 2843, 2865, 2869, 2873, 2895.

[11] SIC 2812, SIC 2819.

B. A new tax should be imposed on hazardous waste disposal and long term storage

To support EPA's required annual spending levels, more than $307 million from the feedstock tax will be needed. To reach another increment equivalent to the feedstock tax, we support a national tax on hazardous waste disposal at the fixed rate of $50 per dry weight ton (or equivalent). Such a tax would, among other things:

produce revenues of the magnitude the current feedstock tax is designed to produce;

produce broader distribution of tax liabilities among industrial categories and a more logical relationship to hazardous waste disposal activities; and

provide incentives where appropriate by (1) reducing the amount of waste generated, and (2) utilizing any technologies to recycle, reuse, neutralize, treat, incinerate or otherwise destroy hazardous waste.

Our proposed combination of feedstock and waste-end taxes still imposes the greater portion of the tax burden of the waste site cleanup program on the chemical industry. However, because so many other industries have contributed to waste disposal in the past, and because of the serious adverse economic impacts of higher taxes on our industry, we believe this proposed combination is as much as the chemical industry can fairly be expected to contribute to Superfund on an annual basis.

1. How to enact a workable waste disposal tax

As stated above, CMA supports a national waste disposal tax at a rate equivalent to $50 per dry weight ton to provide $307 million per year. Such a tax will broaden the base of the current funding scheme and will provide valuable additional incentives for the safe handling and disposal of wastes in the future.

We believe there are several basic requirements for a workable and effective waste-end revenue system. First, there must be a clearly defined taxable substance. Second, there must be a definite taxable event. Third, there must be a verifiable record of transactions to provide the audit trail for enforcement and collection.

We note that it is especially important to tax waste disposal on a dry weight equivalency. Using a "wet" weight basis will seriously distort waste management practices.

Assessing the tax on dry weight equivalency would treat all methods of disposal in a neutral manner and would preserve the strong environmental incentive that is created by a tax on waste disposal. If the tax is assessed on the dry weight equivalency of hazardous waste, the tax would be assessed on the actual content of hazardous material disposed or deposited for long-term storage.

Determining dry weight is a common, routine analytical procedure. Dry weight is the weight of a substance after removing the weight of water. One method for doing this is referenced by EPA in 40 CFR Part 136. Moreover, the post-closure liability tax which is now in place under CERCLA is imposed on a dry weight basis. 28 U.S.C. 4681(b). The experience developed by the Internal Revenue Service in collecting the post-closure tax would apply here.

The operator of the disposal or storage site should be designated as the taxpayer. The operator maintains an operating log which contains a description and quantity of each hazardous waste received and the method and date of its treatment, storage or disposal at the facility. This limits the taxpayers to fewer than four thousand site operators rather than more than 100,000 generators.

When CMA first proposed the enactment of a hazardous waste disposal tax, some expressed concern that state experience would substantiate that a tax on hazardous waste disposal was an unreliable source of tax revenue. Since that time, however, there has been substantial proof that a tax on the disposal of hazardous waste does provide a reliable revenue base.

First, a September, 1984 EPA survey of state experience with waste disposal taxes confirms that state waste taxes were at least as effective and efficient in producing anticipated revenue over the survey period as the federal Superfund feedstock taxes.

Second, IRS collection data confirm that taxpayers are presently paying federal postclosure liability taxes based on the annual disposal of about 4 million dry weight tons of hazardous waste. Moreover, these taxes are being paid without significant IRS guidance or enforcement efforts and after several Congressional leaders have proposed retroactive repeal of these taxes. Under these circumstances, the postclosure data can be viewed as substantiation of at least the minimum revenue base of a more expansive tax on the disposal and long term storage of hazardous waste.

Third, the September, 1984 OTA statement before the Senate Committee on Environment and Public Works contains a lengthy discussion of the virtues of a federal waste disposal tax. (See OTA Statement, pages 9-16.) While we do not agree with the higher range of the OTA Statement revenue projections on a waste end tax, we believe that the OTA Statement provides solid support for the reliability and workability of such a tax.

2. Tax should be on waste disposal, not waste generation

CMA has surveyed the chemical industry's ability to pay waste-end taxes and found that taxes in excess of a $50/dry weight ton disposal tax would have a negative impact on taxpayers and cause tax base deterioration.

CMA's proposal is intended to raise $300 million/year. To raise more than this amount by taxing waste generation, including waste water treatment, on a wet basis, would be inequitable and impractical.

The recently proposed Administration bill contains a waste generation tax that EPA believes will raise $600 million/year. We strongly disagree and object to that part of their proposal. As we demonstrate below by three company specific examples, each company would pay an exorbitant amount of tax for treating small quantities of hazardous waste in waste water systems.

Because the tax applies to waste generation, those who incur the added costs of treating industrial waste to render the waste non-hazardous before its disposal would pay the same tax as those who dispose of hazardous waste. Thus, those whose wastes do not contribute to the nation's hazardous waste sites would, nonetheless, pay for cleaning up those sites.

The inequity of taxing treatment which renders waste nonhazardous is compounded by the fact that the Administration's tax is imposed on a wet weight basis. Those who responsibly manage their wastes in a highly dilute treatment or disposal process would pay higher tax bills under the Administration's proposal than those who dispose of concentrated hazardous waste. The principal impact and burden of the Administration's generation tax would fall upon waste water treatment.

Following are the results of the three companies which have analyzed the impact of the Administration's waste generation tax on their facilities:

Example I

Located in the Midwest, a large manufacturing facility uses waste-water treatment as a principal component of its hazardous waste management program. Its waste-water treatment system is designed to handle an approximate average flow of 20.0 million gallons per day, or 30 million wet tons per year.

Within the manufacturing facility, 68 plants feed into the waste-water system. Due to the nature of products manufactured, RCRA listed hazardous wastes are subsequently generated. Due to the "mixture rule" under RCRA, the entire stream flowing through the system becomes hazardous.

The waste-water system is massive with state-of-the-art technology. The system includes in excess of 15 "qualified hazardous waste management units" as defined under the Administration's proposal, Section 303. Of these units, three are surface impoundments. One of the surface impoundments covers more than 220 acres, or 9.6 million square feet of surface area. This same impoundment has a capacity of 750.0 million gallons.

Under the Administration's proposed tax on hazardous waste, the tax liability for this single waste-water treatment facility would be in excess of $270 million in the first year. The net operating income of this large manufacturing facility for the past three years is considerably less than the first year tax liability. By the end of the third year, the imposed tax liability is greater than the net operating income for the past eight years.

Since this waste-water treatment facility handles listed hazardous wastes, pretreatment upstream provides no remedy from the onerous tax rate. Replacing the surface impoundments with treatment tanks would require enormous amounts of limited capital. Unfortunately, at this particular site, treatment in tanks is not a viable option due to the large flow volume in the system. Given these conditions, this single facility would raise almost 50 percent of the Administration's projected revenue under this taxing scheme.

Example II

Three facilities owned by Company B would owe a total of $107 million under the Administration's proposed waste generation tax.

One facility manufactures ammonia and organic compounds along the Gulf Coast. The facility injects listed hazardous wastes and waste acid into a sandstone formation. Approximately 1.8 million tons are injected annually. Some of the material going to the deepwell is first treated in a large impoundment, and then in a series of tanks. Some of the process waste material goes directly to the deepwell injection operation. This plant would owe approximately $7.6 million under the Administration's waste generation tax scheme.

Another facility which Company B operates in Georgia makes pigment and related products. The waste acid from the process is neutralized in a series of treatment ponds and discharged to the river under a NPDES permit. The Georgia facility would owe approximately $44 million under the Administration's bill.

In West Virginia, Company B makes polymer products and treats listed hazardous wastes in a series of waste water treatment ponds including a neutralization basin, a primary clarifier, an equalization basin and an activated sludge facility before it is discharged to a river under a NPDES permit. The West Virginia facility would owe $52 million under the Administration's waste generation tax.

Example III

At its plant in the East, Company C treats liquid wastes generated on and off site in a wastewater treatment plant (WWTP) which uses powdered activated carbon and biological treatment. In 1981 the WWTP influent included approximately 65,000 tons of wastes listed as hazardous under EPA regulations. That year about 55,000 tons of sludge were removed from the WWTP and landfilled on site. The WWTP treated approximately 45.3 million tons of wastewater in 1981, sending the effluent to a surface impoundment, where it mixed with cooling water from the site prior to discharge to a river. Currently, about 50,000 tons/year of sludge are landfilled, and the WWTP treats about 47 million tons/year.

Based on this facility's current practice, the Administration's waste tax proposal would cost a prohibitive $460 million in the first year. This figure reflects 47 million tons of treated wastewater, which is "hazardous" because it is downstream of a mixture including wastes listed as hazardous by EPA, passing through a surface impoundment for further dilution with cooling water prior to discharge to the river. The mixture of waste water treatment plant effluent and cooling water totals 112 million tons/year. Applying the $9.80/ton tax to this quantity would generate approximately $111 million.

We should note that the recently enacted RCRA legislation provides an exemption from certain requirements for biological waste treatment facilities. These facilities, which were installed to meet requirements under the Clean Water Act, must be maintained with highly dilute waste concentrations. Enormous quantities of water are required for proper waste treatment. The Administration's proposal would result in significantly higher tax liability, therefore, for these taxpayers whose specific waste water treatment facilities already represent a significant investment and are regulated by the Clean Water Act.

A major reason for adopting a waste tax is to expand the very narrow base of the Superfund feedstock taxes so as to include additional taxpayers who have contributed to hazardous waste problems. By proposing a tax on waste generation computed on a wet basis, however, the onus of the Superfund taxes would continue to fall unfairly on the chemical industry. The ability of the Administration's proposal to broaden the base of taxpayers who contribute to Superfund site cleanup beyond these industries is relatively small.

3. Proposed waste generation tax imposes excessive tax liabilities on industry

The Administration purports to raise $600 million each year from the proposed waste generation tax, an amount that we believe greatly exceeds the practical limits of a workable waste end tax. Our analysis indicates that the Administration's proposal would establish a much greater tax burden. According to our calculations, for Fiscal Year 1986, the tax liability of the chemical industry alone would exceed $1.8 billion under the proposal.

CMA has recently completed its 1983 waste survey of member company respondents. This survey includes responses from 722 member company plants that are believed to constitute 80 percent of the U.S. chemical industry. Applying the Administration's proposed tax rates for Fiscal Year 1986 to the CMA waste survey data, the generation tax would produce over $1.8 billion from the CMA survey respondents alone.

In the following table we present our analysis of the waste data furnished by the CMA waste survey respondents and the estimated tax liability those wastes would incur under the Administration's proposed generation tax:

Impact of administration bill on CMA survey respondents

	Millions of tons
NPDES W.W. in impoundments	158
POTW W.W. in impoundments	18
Total waste water	176
UIC wells (50 percent in impoundments)	7.0
Landfill	0.6
Disposal impoundments	0.5
Other land disposal	0.4
Total land tonnage	184.5
UIC injection through tanks	7.0
Incineration	0.4
Other treatment	0.2
Total non-land	7.6

The overwhelming portion of the tax revenue produced under the waste generation tax would be derived from taxing waste water (95 percent). A fundamental difference between CMA and EPA in the estimates of revenue that would be produced under this tax centers on the ability of industry to reduce the volume of waste water streams.

Limitations on the ability to reduce these include the following:

Major capital expenditures would be required to divert these streams.

Biological plants are sensitive to hydraulic load and concentration of wastes.

Diverted storm water would require outfall permits through regular administrative process.

EPA's proposed codification rule would apparently eliminate pH adjustment ahead of primary impoundments as a means of removing waste water plants from tax liability.

New listings already being developed by EPA and mandated by Congress will significantly increase the volumes of waste water subject to tax.

C. General revenues, interest, cost recoveries, and borrowing should constitute remainder of the fund

The two types of industry taxes outlined above at the levels we have indicated—approximately $307 million per year from feedstock and $307 million per year from the disposal tax—will support EPA's projected annual spending needs. This is because contributions from the general federal revenue share, interest on unexpended fund balances, and cost recoveries secured by EPA from responsible parties after it has spent fund money for cleanups should easily provide the balance.

We believe a substantial general revenue contribution to the fund is appropriate for reasons of equity and sound public policy. The problems associated with inactive hazardous waste sites reflect more than 100 years of industrial development in the nation. Hazardous wastes have been and will continue to be generated by a wide range of industries, business concerns, government agencies and defense installations, municipalities, and scientific facilities. The problem is societal in scope and the mechanisms for coping with it should reflect this fact, just as the benefits of resolving the problems will inure to all elements of the country. As Congress recognized when it enacted Superfund in 1980, only through the use of general revenues, both state and federal, can this societal responsibility be fairly discharged. As recently as last fall, the Treasury Department acknowledged this fundamental principle before the Senate Committee on Finance.[12]

EPA projections indicate that it expects to receive 30 percent of inactive site cleanup costs through cost recoveries. Even if only $700 million per year is spent from the fund for cleanups, there would be an average of $210 million in cost recoveries per year at the 30 percent rate. Thus, our estimate displayed below as to cost recovery and interest is probably conservative.

Since it is likely that peaks and valleys will occur in EPA's spending requirements for site cleanup, and in annual levels (though not in overall amounts) of cost recoveries from responsible parties, we also recommend that the Agency be given the authority to borrow up to $350 million annually to assure level funding throughout the five year reauthorization period. Any amounts borrowed could be amortized over a 10-year period and then repaid from Superfund cost recoveries from responsible parties.

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[12] Testimony Before Senate Committee on Finance of Hon. Mikel M. Rollyson, September, 1984.

We note that the Administration proposed providing additional EPA borrowing authority in its bill to reauthorize Superfund. The proper use of borrowing to maintain orderly cash flows for the program would enable EPA to make rapid, effective waste site cleanup while responsibly maintaining tax rates at levels that would not impose severe economic hardship.

The following table shows how our proposed funding mechanism would match EPA spending needs of up to $1 billion per year:

[All figures are stated in millions per year]

Feedstock taxes	$307
Waste disposal tax	+307
General Federal revenues	176
Total funding	790
Cost recoveries and interest	+210
Annual EPA spending	1,000

It should be noted that this annual total does not reflect all expenditures that will be devoted to cleanup of NPL sites. EPA estimates that 50 percent of these sites will be cleaned up by responsible parties.

II. SETTLEMENT AND ENFORCEMENT ISSUES SHOULD BE RESOLVED SO AS TO ACCELERATE THE PACE OF CLEANUP

Aside from providing adequate and fairly based funding for the Superfund program, we believe Congress should consider means to accelerate cleanup through settlement and private participation. Under current law, the government has several enforcement vehicles to seek cleanup and to recover the costs of its cleanup activities. The focus of these enforcement efforts should first be directed at the owner or operator of a site since they are primarily responsible for the creation of the conditions at the site. Rather than enforcement or litigation, however, the goal of expedited cleanup is usually better served by a speedy and responsible settlement process. The factors are complex, but several key components could speed the process and make the whole program more efficient. To achieve these goals, we recommend the following:

EPA should first identify all major responsible parties at a site and enter into negotiations with those who are willing to settle quickly.

Next, EPA should use the fund to pay for the remaining or absent shares, e.g., those who are either unwilling to settle or are not available for settlement.

Lastly, EPA should vigorously pursue non-settling parties to recover the costs of the fund in acting on behalf of the recalcitrant parties.

We believe the proposals of the Administrative Conference of the United States offer sound principles for improving the settlement process. According to these proposals, EPA should place greater emphasis on the negotiation of voluntary cleanups at hazardous waste sites. EPA is also encouraged to exercise greater flexibility in situations where cleanup arrangements are being negotiated rather than litigated. This includes use of fund money to pay for absent shares and apportioned liability based on the volume and nature of wastes at a site rather than full joint and several liability for cleanup. The Administrative Conference notes that this would provide an incentive for cooperating parties to join promptly in an agreement, and would free Agency resources to pursue intransigent parties. We believe these recommendations deserve the support of Congress.

We also urge Congress to endorse a "right of contribution" under CERCLA. Under common law, a party is normally entitled to contribution from other liable parties where the party has been sued for more than his fair share of responsibility. Both S. 51 and the Administration bill would create an express right of contribution in CERCLA, which will be useful in ameliorating the harshness and inequity of joint and several liability and will end the debate over whether the Superfund law affords such contribution. These proposals, however, also preclude a party from obtaining contribution until after the litigation is completed, or until a settlement is made. CMA strongly opposes provisions that would prevent the joinder of additional responsible parties prior to completion of the litigation. We believe that while such a proposal imposes an excessive burden on those parties who settle or are subject to judgment, it also inhibits the settlement process and thereby delays cleanup.

A review of pending Superfund litigation shows that the government has not sued all or substantially all responsible parties at a site and has in some cases sued only a fraction of those parties it has identified as having contributed to the site.

Judgments in Superfund cases may be huge, sometimes into the tens of millions of dollars. To require a defendant to pay the entire judgment without contemporaneous contribution would be an extremely unjust burden. It might even force some smaller companies to seek the protection of the bankruptcy laws.

Moreover, bringing additional parties into the litigation through a contribution action has the effect of bringing all such responsible parties and their financial resources to the bargaining table at an early date. In such litigation they may also be subjected to the direction of the court in maintaining progress in settlement negotiations. Means are available to assure that litigation is conducted in an expeditious manner that will not delay the government's cleanup efforts. These include strict judicial control of cases, consideration of the recommendations of the Manual for Complex Litigation and the use of innovative case management orders, such as those already implemented, in some Superfund litigation.

In addition, Congress should expressly ratify the concept that Superfund dollars should be used to cover the shares of non-settling parties and the shares of parties that cannot be identified or are insolvent, so-called "orphan shares". Experience has shown that most responsible parties are willing to pay for their fair share of cleanup costs. A fund commitment to cover non-settling and orphan shares would provide a tremendous incentive for voluntary cleanup. EPA would, of course, pursue the non-settlers' shares through cost recovery.

Congress also should consider providing that where a party has entered into a good-faith settlement to pay its fair portion of a site cleanup, that party should be released against all further government claims for the site under CERCLA. Current uncertainty on this issue is creating great disincentives to settlements, especially for non-negligent off-site generators who in fairness should have no further association with a site once they have paid for a CERCLA cleanup.

Finally, parties that settle want protection against suits by non-settlers. In some Superfund cases, parties have settled with the government only to find themselves sued for contribution by non-settlers. Congress should provide that a good-faith settlement bars any suit for contribution by non-settling parties.

In summary, voluntary settlement will have to achieve a substantial portion of the site cleanups in order to make the continued progress the public expects. Steps to promote voluntary settlements should be encouraged by Congress to quicken the pace of cleanups and to avoid burdensome and costly litigation which will drain both private and governmental resources.

III. EXPANDING THE SCOPE OF SUPERFUND WOULD DIVERT RESOURCES FROM THE CLEANUP PROGRAM

While we have noted our concerns regarding funding and enforcement, we believe that the Superfund law as now written provides a good, workable framework for emergency response actions and the national waste site cleanup program. We are aware of widespread frustrations that the waste site cleanup program has not appeared to be moving fast enough. We are as anxious as anyone to get the hazardous waste problem behind us.

Despite the initial start-up difficulties with the program, we believe that any fair analysis indicates that EPA is now making good progress in its waste site cleanup efforts. The Agency's recent testimony shows its momentum has been building rapidly over the last two years. Because the program is now beginning to produce and EPA is "on track" under the currently drafted law, we think it would be inappropriate to encumber the process with many new significant amendments that institute new uses for fund money, other than for inactive hazardous waste sites, and which will only disrupt the progress EPA is making. We will describe below some of our principal concerns.

By concentrating its efforts on hazardous waste sites, EPA has begun to make significant progress. However, there have been recent signs that this progress might be diverted by a new focus on many more sites with unknown implications for the future of the program.

For example, EPA recently requested comments in its NPL proposal about the advisability of using Superfund resources to clean up six "South Central Oahu" sites in Hawaii. These sites are proposed for listing on the NPL because they may be contaminated by the agricultural use of pesticides. EPA has acknowledged that pesticides are widely used throughout the country, and there may be many other sites similar to the Oahu sites. We submit that EPA should not divert Superfund resources to the treatment of such sites. In fact, the pesticide liability exemption of Section 107(i) is evidence of a Congressional expectation that significant fund resources not be devoted to pesticide contamination.

Similarly, Congress did not intend to use the fund for extensive remedial action at mining sites. The EPA Administrator should have authority to respond if there is an emergency public health threat posed by mining wastes. However, this authority should not be construed as a broad mandate to clean up mining sites.

We also urge that fund resources not be used to perform remedial work on releases of "pollutants or contaminants." Congress gave EPA the authority to respond to releases of hazardous substances and pollutants or contaminants. They did not, however, give EPA authority to recover costs for cleanup of pollutants or contaminants—only for cleanup of hazardous substances. Because these costs are not recoverable under Section 107 and will therefore diminish the fund, money in the fund should be conserved for serious public health threats and for remedying problems posed by hazardous substances in waste sites.

In addition, we oppose efforts that would increase the fund's share of cleanup activities at municipal landfills. State or local governments should bear the major burden of the cleanup costs for municipal sites. EPA estimates there are 36,000 municipal landfills that may need remediation. It would impose a major drain on the fund unless states are willing to pay their fair share of the remedial costs.

Finally, permanent relocation of citizens residing near hazardous waste sites should be used very judiciously due to its high cost. We recommend that such relocation be considered only where there is a true health emergency related to hazardous waste at a site. We do not support instituting relocation as a routine removal action. Moreover, the concept of relocation should not be expanded to provide aid to businesses affected by a relocation of residents.

We want to emphasize that we are committed to legitimate fund expenditures that lead to fully adequate site cleanup and appropriate emergency response actions. Going beyond these important tasks, however, leads toward an uncharted federal program with numerous goals and almost infinite possibilities of expansion. If we are to achieve the goal of cleaning up problem hazardous waste sites in an expeditious manner, then Superfund resources must be focused on priority hazardous waste sites and true emergency needs.

IV. COMPLIANCE WITH OTHER ENVIRONMENTAL LAWS SHOULD RETAIN FLEXIBILITY

In choosing the appropriate remedy for Superfund cleanup, several environmental laws may be appropriate to use in developing the solution. We support a process whereby EPA uses a case-by-case analysis in determining whether these environmental standards should be used. To illustrate our point of view, the applicability of RCRA standards will be discussed.

Uniform application of RCRA, without consideration of site specific factors, would be inappropriate at Superfund sites. In some cases application of these standards might even achieve a less environmentally protective solution. RCRA standards are designed to provide a strict set of uniform minimum standards for operating RCRA facilities. Many RCRA standards are technology based rather than health based, requiring the use of specific technologies. In contrast, cleanup standards for Superfund sites must achieve the goal of protecting health and the environment, and therefore require site-by-site flexibility.

Some RCRA standards, however, may be relevant to consideration of the appropriate level of cleanup at a particular site. EPA has recognized this, and under proposed revisions to the NCP, provides for consideration of RCRA standards in Superfund cleanups. Even here, however, one must be cautious in considering, and potentially applying, RCRA standards. For example, RCRA standards require that sites be covered with a cap of low permeability materials at closure. Some Superfund cleanup technologies, however, depend upon introduction of bacteria into the site to break down the organic wastes and render them non-toxic. By installing a cap, bacterial action would be precluded.

Some RCRA groundwater standards suffer from other problems. For example, the basic RCRA groundwater standard (no increase in contamination over background) is not health based; rather, it is based on a zero contamination concept. In addition, RCRA groundwater standards are measured at the edge of the RCRA facility, for example, the edge of the landfill. Requiring control to any particular level at such a boundary might overlook entirely the question of the relevant human or environmental point of contact or use. For instance, a drinking water standard (which could be required under RCRA) expresses concentration levels that people should not drink, and site remedial measures should assure that people not drink substances in these concentrations. It may not make sense, however, to require that the concentration level specified in such a standard be met at the waste site boundary in situations where (1) the concentration would be substantially diluted or entirely dissipated by the time it reached a point where the water could be drawn for drinking or (2) the groundwater, for reasons apart from the waste site proximity, is not going to be used for drinking in any event.

It is important to assure that resources are not wasted on unnecessary construction projects. Rather than requiring mandatory application of standards, remedial actions should be relevant and appropriate at each site in order to protect health and the environment. Where such standards are appropriate and applicable, EPA should be able to make determinations that they will apply.

In fact, under RCRA substantive standards, attainment of "background levels" may often be required. The concept of "backgr levels" has no logical connection to a level of control that is actually needed at specific sites to protect health and the environment. To require a remedy to achieve background levels may in many cases result in cleanup far beyond what is necessary to protect health and the environment, with no benefit to anyone other than the construction contractor.

V. COMPENSATION PROGRAMS SHOULD NOT BE FUNDED OUT OF SUPERFUND

Providing compensation for persons suffering from chronic diseases in America is a serious subject, and one that deserves careful consideration by Congress. Because of the broad scientific, social, economic and legal issues involved, however, Congress should not treat this matter simply as an "add-on" to the Superfund hazardous waste site cleanup program. In previous testimony we explained why, in light of the current state of scientific evidence and the need to avoid diverting Superfund from waste site cleanup, it would be inappropriate for Congress to legislate programs for "victims' compensation" as part of the Superfund. In passing H.R. 5640 last year, the House wisely rejected any such proposals. The House in fact defeated by a vote of 200–159 an amendment to fund a compensation scheme out of Superfund.[13]

Enactment of a victim's compensation program, as a part of Superfund, would be a serious mistake. It would divert needed resources from the cleanup of hazardous wastes sites. Moreover, it is likely to develop into an uncontrollable entitlements program that would be extremely costly for the entire nation. Once a federal right to compensation is established, history indicates that it is unlikely that Congress would be able to limit compensation to a manageable and reasonable benefits program.[14]

In considering the compensation issue, we urge Congress to evaluate the scientific data that has been developed by CMA and others. Approximately two years ago CMA and several other organizations contracted with a scientific panel of Universities Associated for Research and Education in Pathology (UAREP). The purpose of the contract was to conduct the first comprehensive study of the health effects on populations in the vicinity of hazardous waste disposal sites. To assure the independence of the scientific panel, the UAREP contract with the sponsoring organizations was managed by Arthur Young and Company.

UAREP has completed its study and released its final report at a press conference on March 14, 1985. The study's principal conclusion is that "there is little scientific evidence that chemical disposal sites have had serious effects on the health of populations living near them." This, of course, does not mean that these sites pose no risks, and UAREP strongly urges prompt remedial action to reduce the potential for health effects. The results of the UAREP study raise fundamental doubts about the need for a major new federal program to compensate persons allegedly injured by waste sites.

VI. RECOMMENDATIONS REGARDING CURRENT REAUTHORIZATION PROPOSALS

On March 1, the Senate Environment and Public Works Committee approved S. 51, a bill to reauthorize the Superfund program. In addition, the Administration recently offered its Superfund reauthorization proposal. A summary of our views on major features of these proposals is set forth below:

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[13] See Congressional Record of August 10, 1984, at H8892 to H9006.

[14] This is amply demonstrated by the history of the Federal Black Lung Act. Under this statute, a compensation program for miners expanded from a predicted overall cost of $200 million to an actual cost of $2 billion a year.

A. Fund size

EPA states that it can effectively spend about $1 billion a year over the next five years to clean up inactive hazardous waste sites. We support this level of funding. A fund of this size will enable rapid cleanup yet provide for efficient management of the program. S. 51, however, recommends $7.5 billion in funding over the next five years, a level which we believe is in excess of funding needs.

B. Fund source

The Administration bill recognizes that current CERCLA feedstock taxes should not be increased. It would continue these taxes at the current rate of approximately $300 million a year. We strongly suoport maintaining feedstock taxes at current levels, as any increase would have adverse economic consequences for the chemical industry.

The Administration's proposed waste generation tax, however, is seriously flawed. Although we have urged adoption of a tax on hazardous waste disposal for years, the Administration's proposal would tax the generation of hazardous waste calculated on a wet weight basis. This would place the tax unfairly on the chemical industry. Moreover, using currently proposed rates would impose a tax burden of over $1.8 billion a year on the chemical industry, far in excess of the EPA's $600 million a year target.

The Senate bill does not address funding source, leaving the matter to the Senate Finance Committee.

C. Scope of cleanup program

The Administration bill focuses on the cleanup of inactive hazardous waste sites. We believe it is essential to maintain that focus if the cleanup is to continue at a rapid pace. Therefore we strongly support the Administration's position that Superfund generally should not be used for such purposes as: mining activities covered by the Surface Mining Reclamation Act; releases due to the lawful application of pesticides registered under the Federal Insecticide, Fungicide and Rodenticide Act, releases from residential, business or community structures not due to hazardous waste sites; public or private water well contamination not due to hazardous waste sites; releases due to naturally occuring substances in their unaltered form; releases covered by and in compliance with permitted discharges and emissions; releases of pollutants and contaminants and natural resource damages.

S. 51 also would focus Superfund more on the cleanup of inactive hazardous waste sites. In particular, it prevents the use of Superfund money to respond to a release of a naturally occurring substance, a release from products which are part of a building structure or a release into a drinking water system due to deterioration of the system through ordinary use. While these are worthwhile steps, we believe the more comprehensive approach adopted by the Administration is preferable.

D. Compliance with other environmental laws

The Administration's bill properly recognizes the need for site-by-site flexibility in selecting an appropriate remedy. Because of the diverse conditions found at Superfund sites, strict application of standards without adjustment for actual site conditions may require excessive expenditures without providing greater protection of the health and environment.

S. 51 also adopts this flexible approach. While assuring a degree of cleanup which at a minimum protects health and the environment, the Senate bill provides that remedial actions must be relevant and appropriate under the circumstances at each site.

E. Compensation issues

We agree with the Administration that Superfund should not be used to fund an administrative compensation program. Compensation programs should not be in competition for Superfund waste site cleanup money. S. 51 allocates up to $30 million a year from Superfund for grants for as many as ten pilot victim assistance programs for populations at substantially increased risk due to releases of hazardous substances. The programs will include medical screening, health insurance and certain medical expenses. While CMA can support the medical screening aspects, we have concerns and many questions regarding the provision of health insurance and the payment of medical expenses.

Both bills recognize the inappropriateness of including a federal cause of action for persons alleging injury from exposure to hazardous substances. This issue is better left to existing state law and should not be included in a program to clean up hazardous waste sites.

F. Enforcement and settlement issues

Voluntary settlements play an important role in the cleanup program and should be encouraged in order to quicken the pace of cleanup. Both bills would improve the settlement process by protecting parties that settle against suits by non-settlers. Another useful provision in both bills is the explicit recognition of a "right of contribution". We support a right of contribution. As drafted, however, this right is seriously diminished by withholding its exercise until after judgment or settlement. While imposing an excessive burden on those parties who settle or are subject to a judgment, it would also have a negative impact on the likelihood of settlement.

G. Pre-enforcement review

Both bills would limit judicial review rights in a highly unfair manner. Persons subject to an administrative cleanup order could not seek judicial review of that order until EPA tried to enforce that order in court. This would expose a party subject to such an order to the risk of treble damages and substantial daily penalties.

Where any party faces an order requiring massive efforts and expenditures which might take months to complete, that party should not be cut off by statute from the option of at least attempting to convince a court to review the propriety of the order. The fact that the propriety can be reviewed once EPA brings an enforcement suit is wholly insufficient to protect againt abuse. Of course, the judicial review process should not be abused so as to delay the waste site cleanup program. The courts are fully equipped, however, to assure that such abuses will not occur.

H. Natural resource damages

The Administration bill would eliminate use of the fund to pay for damages to natural resources. However, the ability of federal and state governments to recover such damages from responsible parties under Section 107 of CERCLA would be maintained. This approach was taken by the House of Representatives in 1984 when it adopted H.R. 5640.

We support eliminating use of the fund to pay any natural resource damage claims. Such claims could potentially divert a great amount of financial resources away from site cleanup. As the Committee report explained, Superfund revenues used to pay these claims are diverted from the cleanup of the nation's worst abandoned hazardous waste sites, which is the primary objective of the Superfund program.

While we support the Administration bill's prohibition on the payment of natural resources damage claims out of the fund, we note that S. 51 embraces this concept by providing that no Superfund money may be used for these claims if the President determines that the money in the fund is needed for cleanup activities. We do not believe S. 51 goes far enough toward focusing Superfund on the important work of site cleanup.

I. State cost share

The Administration bill would increase the state cost share for remedial actions at privately owned facilities. Rather than the current 10 percent, states would be required to pay 20 percent of the costs for remedial actions. S. 51, however, leaves the state share at the current 10 percent level.

We believe that state cost share for private facilities should be at least 10 percent and that Congress should carefully consider the Administration's recommendation to raise this figure to 20 percent. State participation is an essential element in any well-balanced and workable Superfund cleanup program. Use of federal and state revenues helps assure fiscal and operational accountability and responsibility. Without such participation, there would be a clear tendency to overspend, wasting resources, since someone else's money rather than public revenue would be involved.

J. Publicly owned or operated facilities

CERCLA established certain requirements that a state must satisfy before it is eligible to receive Superfund money for remedial action at a hazardous waste site. One such requirement is that in the case of a site owned by a state or a political subdivision, the state must pay at least 50 percent of the cleanup costs. The Administration proposes in Section 107 to raise this percentage to at least 75 percent for sites operated directly or indirectly by the state or political subdivision. The Senate bill, while changing the requirement to sites operated by the state or municipality, does not alter the 50 percent requirement.

We believe that the Administration's recommendation should be given serious consideration. Where a state or political subdivision is involved in the operation of the site, whether directly or indirectly, fairness dictates that it should shoulder the major share of any necessary cleanup costs. Similarly, we strongly oppose provisions such as in last year's H.R. 5640 which would have limited that 50 percent requirement to sites which are both owned and operated by a state. A state or political subdivision should be held accountable for waste management decisions they have made or allowed to be made where the site is owned, but not operated by the governmental unit.

K. Siting of hazardous waste facilities

A critical issue facing the nation is the availability of hazardous waste facilities. In order to properly dispose of the hazardous waste that is generated in our society and to avoid "midnight dumping," it is essential that states have adequate waste disposal capabilities.

The Administration bill and the Senate bill would create an economic incentive for states to expand existing facilities or create new long-term in-state capacity to manage hazardous wastes. This would be accomplished by prohibiting the use of fund money for response actions in those states that do not assure the availability of hazardous waste disposal capacity sufficient to handle that state's needs. Depsite this restriction, EPA could still finance a response action where a major public health or environmental emergency exists.

VII. BROAD BASED TAXES

CMA believes that the chemical industry should not bear either feedstock or waste-end taxes beyond those levels recommended above. Therefore, to the extent that the items described above—feedstock and waste-end taxes, general revenues, cost recovery and interest—do not yield a fund of the size eventually authorized by Congress, CMA supports a broad-based tax—one which taxes a substantial part of U.S. industry at a low rate—to make up the difference.

CMA has been working closely with the American Petroleum Institute (API) and the Congressional staffs of several Members to develop the concept of a broad-based invoice-type transaction tax for Superfund which we call the Manufacturer's Environmental Excise Tax ("MEET"). CMA agrees with API that "MEET" would be an acceptable broad-based tax to our member companies. But our approval of "MEET" should not preclude the consideration of other alternatives that would satisfy our basic criteria of a broad-based tax.

CMA believes that any broad-based tax to finance the Superfund program should be tested under the following basic criteria:

Revenue potential

The proposed tax should provide predictable and adequate levels of revenues to finance the cleanup of problem waste sites.

Equity

The tax must be very broadly-based. EPA identification of responsible parties at National Priority List (NPL) waste sites has demonstrated that numerous industries, and over four thousand companies, have contributed waste to these problem sites. Fairness dictates that all these industries should also contribute to the cleanup of these sites through their tax payments.

Trade and economic impact

Any proposed tax should have a neutral or minimal impact on trade. The tax should not apply to exports. It should apply to imports or be imposed at such a low rate that it does not disadvantage domestic manufacturers with respect to imported products.

Avoidance of repetitive taxation of same transaction

The proposed tax should avoid any repetitive taxation of the same transaction ("cascading of tax payments").

Environmental nexus

Any proposed tax should have at least some environmental nexus with the problem waste sites for which the tax is required. Since a wide spectrum of manufactured products appears at problem waste sites, a tax that would apply broadly to manufacturing would supply the requisite environmental nexus.

Administrative feasibility, cost and number of taxpayers affected

The proposed tax should be simple and inexpensive to administer and to collect. We believe that a tax which applies to all manufacturers would not impose an undue administrative burden.

We submit that these are the basic criteria by which any proposed broad-based tax should be judged. Several members of the Senate Finance Committee have introduced bills to establish a broad base funding mechanism for the re-authorization of Superfund. These include Senator Bradley (S. 596), Senators Mitchell and Chafee (S. 955), and Senators Bentsen and Wallop (S. 957). We view the introduction of these bills as a positive development for several reasons: First, these bills reflect a growing congressional recognition that the Superfund site cleanup problem is a societal one and not merely a specific responsibility of the chemical and petroleum companies alone.

Second, these bills also reflect the recognition that the current badly depressed petrochemical industry should not pay increased taxes of the level needed to fund the Superfund site cleanup program for the next 5 years. Senator Bradley and Senator Bentsen would continue the present feedstock taxes at existing levels for an additional 5 years. Unfortunately, however, Senators Mitchell and Chafee in S. 955 would amend the feedstock taxes to raise an additional $100 million, which we oppose.

Third, all the bills recognize the need to develop a waste-end tax to raise a reasonable amount of revenue—$300 million per year. CMA believes that the waste disposal tax that is proposed in the Moynihan-Bentsen bill, S. 14 and Hall-Fields, H.R. 2208, (which was adopted by Senator Bradley) at the rate of $50 per dry weight ton or equivalent is a workable tax at a reasonable rate which achieves some broadening of the tax base. In contrast, the waste generation tax as proposed in the Mitchell-Chafee bill shares some of the faults of the Administration's bill. It is a wet weight tax and applies to some treatment facilities. As such, it is environmentally unsound and falls disproportionately on the chemical industry.

Fourth, all emphasize the need to continue Federal general revenue contributions to the Superfund trust fund.

Fifth, all would provide a broad-based tax as a third funding component for the Superfund cleanup program. CMA appreciates the great difficulty in developing an appropriate broad based tax alternative for Superfund. We believe, however, that judged by the criteria we have set forth above, the broad-based tax developed by Senator Bentsen and Senator Wallop in S. 957 is preferable to those provided in S. 596 and S. 955.

The Bentsen-Wallop bill would provide a simple, broad-based transaction tax at low rates. Since the tax applies to all manufacturers, it has the required environmental nexus. Moreover, the proposed tax is relatively trade neutral and free of "cascading" problems. CMA believes that S. 957 represents an excellent foundation to develop a broad-based tax for Superfund.

Mr. HEFTEL. There is a proposal from MEET which might also be described as a value-added tax, and it has been proposed by both CMA and API. Under that proposal, would it be possible for a high technology company selling a successful product, to pay a higher tax than an established low-margin industry, even though both had the same bottom-line income?

Mr. DIBONA. The tax is on the sale value of the manufactured product.

Mr. HEFTEL. Would it be the gross receipts less the direct material expenses?

Mr. DIBONA. Well, in the method that we have, it would involve a credit method, and that would mean that to the extent that you paid a tax on those materials that were used, you would deduct that tax from the tax that was paid on the individual item; so essentially it would work out to approximately the same thing.

To the extent that a high margin product cost more, you would pay a larger tax than a low-priced product. It really has nothing to do with margin. It has to do with price. The rate, you should understand, if applied this way is quite small.

That is, one one-hundredth of 1 percent generates $140 million, if this were applied on all manufactured goods. It would be rebated on exports and it would be imposed on imports. So less than a tenth of a percent, for example, would generate $1 billion a year.

Mr. HEFTEL. Could a company with a net operating loss end up paying a substantial tax under that proposed formula? Is that possible?

Mr. DIBONA. The tax has nothing to do with the profitability of the company. It has only to do with sales volumes, so it could pay a tax.

Mr. FORNEY. That is true really of any of the taxes that have been proposed here, both this one certainly, as well as the feedstock tax where a number of companies that are losing a lot of money on their petrochemicals are paying feedstock taxes today. Also a waste-end tax applied on waste in the same manner that the post-closure tax is being imposed today, would tax some of those companies who may very well be losing money as well.

Mr. DIBONA. The point I was making is that because this tax is much broader based than the current tax, the tax that any individual company would pay is much less than the current concentration of tax on a relatively small number of companies. This would involve all manufacturers in the United States as opposed to a small subset of manufacturers who are paying the tax independent of whether they are making money.

Mr. HEFTEL. Would it be preferable to consider using profitability as the basis for establishing the tax?

Mr. DIBONA. Well, it is possible to do that. We thought a lot about alternative methods of doing this and we were looking for an environmental nexus. That is, we looked at what was in the sites, that could be identified, and we found that it was such a broad cross section of the manufacturing community that had put materials in these sites, that we saw a relationship.

It was not just the chemical industries. In fact chemical and petroleum industries are rather small contributors to the sites, when you look at the total volume in sites like Stringfellow.

So the intent was to broaden it, to include all companies, and to create a closer nexus between the source and the people who put stuff in the sites, and those who might then pay.

Mr. HEFTEL. Therefore, you are in effect suggesting that because of responsibility, you will have companies with net losses who are contributing to the fund?

Mr. DIBONA. That is correct and that is of course true of every one of the taxes that is proposed.

Mr. FORNEY. As we do today.

Mr. HEFTEL. No, I understand that, but obviously, you would, for a variety of obvious reasons, consider a tax that was only based on profitability or ability to pay. And the question is, would that be more, or less fair?

Mr. FORNEY. I think that ability to pay in this case is not very well related to the environmental nexus from which the problem of cleaning up the waste sites is derived, and so it would be our view that the tax should be based on the kind of manufacturer's environmental excise basis that we have described, in order to properly relate it to the environmental action that we are trying to correct.

Mr. **Heftel**. What is the likelihood that you have a substantial number of companies who are operating in a loss position, who simply go out of business as a result? Is that a very real problem?

Mr. **Forney**. I think that is a very remote problem. As Mr. DiBona has described, the rate at which this tax is proposed to be applied is a very, very low one indeed, and the likelihood that anything of that kind could happen, as opposed, say, to the very heavy tax on petrochemicals, is unlikely. On the other hand, petrochemical businesses are losing money today, and a very few number of companies are in fact being shut down and driven out of business. I think that is a very real danger of the feed stock tax, whereas the danger from a very low rate on a manufacturer's environmental excise tax I think would be low, or nonexistent.

Mr. **DiBona**. There are really two reasons for this. We have mentioned one of them. That is that we are talking about in the manufacturer's excise tax, a much broader based tax, and therefore the rate is much lower, but there is the second, and probably much more important problem, and that is the problem of dealing with the export-import problem.

That is, the current feedstock tax and any of the waste end taxes that are currently discussed, are taxes which are effectively imposed on domestic companies and not on foreign companies.

Therefore it is impossible to pass through these taxes, and even to argue that, to attempt to try and deal with that problem by specifying that derivative chemicals will be subject to the tax—that is, it would be imposed on imported derivative chemicals, does not solve this problem because there is the next layer of manufacture that is involved.

And that drives you inevitably to looking for some other method of dealing with this and that gets you to some form of taxation which can be applied to exports—excuse me—applied to imports and rebated on exports. And the simplest method of doing that is the manufacturer's excise tax that we have described.

You simply cannot lay out enough of the chain of derivatives to deal with them unless you go to the whole manufacturing community, because most things manufactured in this country involve some substantial chemical input or petrochemical input in one form or another.

So the simple method of doing it is to simply apply it to all manufactured goods and make sure that you have applied it to imports, and rebated on exports.

Mr. **Heftel**. Thank you. Mr. Duncan.

Mr. **Duncan**. Thank you, Mr. Chairman. I want to thank the panel. I apologize for having to run over to the floor for a few minutes, but I have read your statement, and yours, Mr. Forney, I read it earlier, before you testified, about the possible loss of jobs, and your inability perhaps to export. Would you care to say anything else about that, or elaborate a little further on what would happen with an increase in the fees?

Mr. **Forney**. The petrochemical industry is a very important part of the overall chemical industry, and while the overall chemical industry has prospered reasonably well during the period in which Superfund has been in operation, the petrochemical industry has suffered very, very badly indeed. As I said in my comments, 1981 was the last year of real profitability for this industry, and since then it has been in a break-even or a loss position. Plants have been shut down and the petrochemically derived products imported from overseas, rather than produced in this country, and so there has been a very significant loss of jobs, both in the petrochemical industry itself and in the derivative products where most of the foreign trade takes place.

The chemical industry is losing its position in international trade in this country. We have always contributed, historically, a very significant trade surplus. We are losing that, and the loss that has taken place since 1981 has all taken place in this petrochemical sector.

We are holding our own in other places. And so I believe that any thought of increasing this petrochemical feedstock tax would have a very significant effect on employment and undermine what remains of the chemical industry trade balance.

Mr. DUNCAN. Do you think there is anything that the administration's waste-end tax would tax that should not be taxed?

Mr. FORNEY. Our objection—shall I speak to that?

Mr. DUNCAN. Anyone on the panel, just go right ahead.

Mr. FORNEY. And perhaps some of the others would, too. Our objection to the administration bill is largely this. That it places a tax on waste managed or waste generated rather than waste disposed of, and as a consequence is really not related to the toxic waste problem.

The toxic waste problem in some of these orphan sites has been produced as a result of disposal of toxic wastes after they have gone through waste treatment plants, and that is where the tax ought to be applied.

The idea of taxing facilities that companies have put in at very considerable cost, in order to provide an environmental answer to toxic waste problems, and reduce the amount of toxic waste coming out the other end, the idea of taxing those facilities is a very, very poor one. It is a poor concept environmentally and we should shy away from that very, very hard.

The tax should be on the material that must be disposed of after it has gone through the environmental treatment facilities.

Mr. DUNCAN. Do you think the tax should be computed on a dry-weight, or a wet weight basis?

Mr. FORNEY. There is no question in our mind that the tax should be computed on a dry-weight basis. There is no doubt whatever that this tax can be calculated and calculated very well on a dry-weight basis. Determinations of moisture content are amongst the easiest analytical procedures that any of us learn in school.

Mr. DUNCAN. Would any—excuse me.

Mr. FORNEY. The thing we do not want to do is to put companies like my own in a position where we are deciding on the water content of the waste that we dispose of for tax reasons, as opposed to environmental reasons.

The way we run our facilities today, we try to run them to either meet or better the environmental regulations, and in almost every case we better them significantly.

What we do not want to do is be placed in a position where we are trying to decide the water content of the material that goes into these waste treatment facilities in order to reduce our taxes. We want to determine that water content to do the best environmental job.

Mr. DUNCAN. OK. My time is up. May I thank all of you.

Mr. HEFTEL. We have a vote, gentlemen, followed by a second vote, and I think the only way under the rules that we can function in the absence of another Member of the right side of the room, is for us to adjourn and return in approximately 20 to 25 minutes, because we will have to wait for the second vote. I apologize, but I have no choice. Thank you. We will continue with the next panel when we return, and thank you, gentlemen.

Mr. GREGG. Mr. Chairman, I did have a couple of questions.

Mr. HEFTEL. Mr. Gregg, would you like——

Mr. GREGG. If I could just address a couple of quick questions.

Mr. HEFTEL. Surely.

Mr. GREGG. I would like to ask the National Manufacturers, Mr. Seibert, do you agree with this broad-based tax concept?

Mr. SEIBERT. Congressman, our board of directors will be meeting at the end of this month, at which time we will take up that question, and as soon as our board decides, we will be back to the committee.

[The following was subsequently received:]

NATIONAL ASSOCIATION OF MANUFACTURERS,
Washington, DC, June 4, 1985.

Hon. DAN ROSTENKOWSKI,
U.S. House of Representatives, Rayburn House Office Building, Washington, DC.

DEAR MR. CHAIRMAN: After presenting testimony before the House Committee on Ways and Means on May 9, 1985, on the reauthorization of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), or Superfund, I was asked NAM's position on Superfund funding mechanisms. Enclosed for your information is policy adopted by NAM's Board of Directors on May 24, 1985. I hope you will find it constructive.

Please feel free to contact me should you have any questions.

Sincerely,

H. RICHARD SEIBERT, Jr.,
Vice President,
Resources and Technology Department.

Enclosure.

POLICY

The National Association of Manufacturers is concerned over proposals to increase substantially current Superfund revenue levels. American industry already has assumed a substantial cleanup burden. Private cleanup efforts coupled with existing Superfund programs represent the upper limit on industry's ability to shoulder that burden. Over the next five years, the fund should not exceed $5.3 billion, the amount which can be prudently spent on site cleanups.

As a matter of general policy, NAM opposes proposals raising new federal taxes on businesses. They could impact economic activities in several ways:

Any increase in taxes on domestic production will raise the cost of American made goods and make them less competitive in domestic and international markets.

Manufacturing behavior is likely to be altered. Businesses would be encouraged to close existing facilities or locate new ones offshore, with a negative impact on domestic employment.

Ultimately the consumer will bear the burden.

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), or Superfund, is funded by a narrowly defined tax on feedstocks and a 12% contribution from general revenues. NAM believes that further funding of Superfund should be by a continuation of current feedstock taxes without change and by general revenues.

Imposition of funding burdens on single industry sectors in excess of current levels are inappropriate. This position reflects our view that environmental hazards have resulted from manufacturing processes that have been of service to society, and social costs should be spread over a broad spectrum of taxpayers.

We strongly believe that the focus of Superfund program expenditures should be kept on the cleaning up of abandoned hazardous waste sites and the Federal government should resist efforts to broaden the scope, and thereby hinder the effectiveness of the program. Consideration of other programs, such as compensation for toxic injuries should be examined on their own merits, separate and distinct from Superfund.

Mr. GREGG. I would like to ask Mr. Forney from Du Pont, the 25 cents that the administration has now adjusted their treatment tax to on the waste end, does that still represent a significant, a significant detriment?

Mr. FORNEY. The total amount of the administration waste end tax is about double the amount that the Chemical Manufacturers Association supports.

Mr. GREGG. I am just talking about the treatment part. Under their proposal, as they explained it to us today, they are no longer taxing the treatment end, that the $9 that they originally had, or whatever they had, they are down to 25 cents on the treatment side.

Mr. FORNEY. It was $2.80 originally.

Mr. GREGG. They are down to 25 cents on the treatment side. Is that still a problem? The 25 cents?

Mr. FORNEY. Yes; it is still a very significant problem to those of us who have very large wastewater treatment facilities.

Mr. GREGG. And one more question. Why should the broad based tax be on everything that is manufactured? Shouldn't we be able to conceive of a broad-based tax that is just limited to chemicals, and the use of chemicals, and the reproduction of chemicals? Now granted, everything we manufacture may have chemicals in it, but, I mean at some point we should be able to come to some agreement, that such an excise tax as the Wallop bill would be limited to the chemicals, and the reproduction, and the use, rather than just throwing it at everything that comes into the economy.

Mr. FORNEY. Well, the problem is that almost everything that is manufactured has some chemical input. If you look at these sites, it is transportation companies, electronics companies, and others, that are the principal disposers into the sites. They are major users of solvents, for example, to clean the car before they paint it, and to etch transistor boards and other activities of that kind.

The problem is that if you do not end up taxing every clothes pin that comes from Singapore made out of plastic, you will prevent U.S. chemical companies from passing through the tax, which is of course the intent of taxing at source.

Mr. GREGG. Of course, if you are going to go to a value-added tax, what is the point of even keeping the feedstock and the waste end tax? You have got the potential there to raise the money, right there, and you have put into place a massive tax capability.

Mr. FORNEY. I mean if you were being perfectly logical about this thing you would use general revenues. There are reasons, obviously, why that is unlikely to occur. The next best proxy for that is this broad-based manufacturer's tax which bears some nexus to the environmental problem.

It is very broad based and would be, would be a rational solution to the problem. There was a certain amount of realism in our recommendations.

Mr. **Gregg**. Well, except that when the Underwood bill was passed in 1913 to create the income tax, we started at 1 percent, too, and may start a value-added at one one-hundredths of 1 percent, but I assure you that once you start it, it is not going to stay there.

Mr. **Forney**. As we advocated our position in this matter, we were attempting to face the political realities, that we felt that it was unlikely that the Congress would depart from the feedstock tax that it had already, at least at that level. Certainly as Mr. DiBona said, the broader based this tax is, the more it is related, really, to the very broad nature of these abandoned toxic waste sites out in our society, and our proposal was really put forth as we faced the political realities involved.

Mr. **Gregg**. I am sorry, we have run out of time. I would like to pursue this further.

[Whereupon, a short recess was taken.]

Mr. **Anthony** [presiding]. The committee will resume sitting.

Our next panel is Institute of Chemical Waste Management, Suellen Pirages, Ph.D., director; Hazardous Waste Treatment Council, Richard C. Fortuna, executive director; Dr. William Nordhaus, professor of economics, Yale University; and Howard J. Hoffman, Esq., Washington, DC.

Welcome.

We will accept your full statement into the record, and you have 5 minutes and you are welcome to summarize as you see fit and we will just take you in the order in which you were called.

STATEMENT OF SUELLEN PIRAGES, PH.D., DIRECTOR, INSTITUTE OF CHEMICAL WASTE MANAGEMENT, WASHINGTON, DC

Ms. **Pirages**. Thank you.

My name is Suellen Pirages, and I am the director of the Institute of Chemical Waste Management, a component of the National Solid Waste Management Association. Our members are those commercial firms who are actively engaged in all aspects of hazardous waste management: Transportation, treatment, incineration, and disposal.

We urge this committee to expeditiously reauthorize CERCLA. It is a very necessary piece of legislation and one that we fully support.

In summarizing my testimony, I would like to raise two points. The first is our objection to the use of a waste disposal tax as a major portion of the funding mechanism for CERCLA. We are opposed to the use of the disposal tax for three reasons:

One is that there is a continuing decreasing revenue base for the waste disposal tax. As the 1984 amendments require minimization of hazardous waste generation and as the restrictions on land disposal are imposed by the EPA, the amount of waste available to tax under a waste disposal tax will quickly diminish.

The second reason that we oppose it, is that the burden will be placed on those manufacturing firms that have no other option for their waste but to treat them and to place the treated residue in a land disposal facility. These are manufacturers that use inorganic compounds in their products. Inorganic compounds cannot be destroyed. They are natural elements of our environment. These manufacturers include the automobile industry, farm and other machinery manufacturers, electronics firms, to name just a few.

It seems unjustified to make these manufacturing firms pay the full price or a major portion of Superfund when they have no other options for managing their waste. In addition, these companies are also feeling very severe economic conditions currently and a high tax on land disposal of their waste could be the last straw in maintaining their businesses.

Our third reason for opposing the waste disposal tax is that it will encourage what we feel are undesirable changes in management practices. We are already seeing today an increased volume of hazardous industrial wastewaters being generated. These wastes are not treated properly but are rather discharged directly to our surface waters and into our public sewage system. This is done legally. The discharge limits that have been developed under the Safe Drinking Water Act and the Clean Water Act that regulates such discharges are inadequate to properly protect the environment from the broad range of organic compounds that can be found in hazardous industrial wastewaters.

A recent survey by CMA illustrates that between 1981 and 1983, the volume of industrial hazardous wastewaters produced by their members, increased by 8 percent. The amount going to the public sewer system also increased by 14 percent. The amount of incineration, treatment, and disposal engaged in by the members of the CMA decreased 30, 63, and 70 percent respectively. We feel that this is an undesirable trend and one that a waste disposal tax would encourage further.

The last point that I would like to raise to this committee is that we encourage you to continue the Post Closure Liability Trust Fund. This fund is the only mechanism that the commercial industry has to plan for future liabilities. There is no insurance available for a facility after it is closed. A mechanism is needed enabling us to put aside funds now, while we are in operation, in case there is a problem at the site once it is closed.

The Post Closure Liability Trust Fund is the only mechanism available to us and to the communities that host these facilities to be assured that remedial action can take place quickly, should it be necessary. Thank you.

[The prepared statement follows:].

STATEMENT OF SUELLEN PIRAGES, PH.D., DIRECTOR, INSTITUTE OF CHEMICAL WASTE MANAGEMENT

Mr. Chairman and members of the Committee, my name is Suellen Pirages, Director of the Institute of Chemical Wastes Management (ICWM). The Institute is a component of the National Solid Wastes Management Association and was formed in the late 1970s to promote proper management of hazardous waste. Members of ICWM are those commercial firms engaged in all aspects of hazardous waste management: transportation, storage, treatment, incineration and disposal. In addition, ICWM members conduct remedial actions under the Superfund program and receive

Superfund wastes for treatment and disposal at our commercial facilities. It is the commercial waste service industry that has solutions to our national hazardous waste problems.

The Institute is pleased for the opportunity to testify before this Committee in support of the reauthorization of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and to discuss financing and tax issues related to reauthorization. In this regard, my testimony focuses on two issues:

The sources of funding for the Hazardous Substance Response Trust Fund (HSRTF), and

The continuation of the Post Closure Liability Trust Fund (PCLTF).

HAZARDOUS SUBSTANCE RESPONSE TRUST FUND

Several proposals have been made regarding appropriate revenue sources for the HSRTF. There include feedstock taxes, waste taxes, general revenues, and taxes on corporate income. As this Committee evaluates these proposals, I urge you to consider four issues: the scope of the job to be done, reliability of any one funding source, ease of administration, and the impact of each proposed tax on U.S. industries.

Scope

Until recently the scope of Superfund action focused primarily on abandoned chemical waste management sites. Now there is discussion to include some sites contaminated by compounds other than industrial chemicals.

In developing appropriate funding mechanisms, the Institute believes that no one sector of our society should bear sole responsibility for our current problems. All of society has benefitted from chemicals and manufacturing products that generate hazardous waste. The funding sources should reflect this reality.

Thus, the Institute suggests that any expansion of the scope of the fund must be accompanied by an expansion of the tax base. For example, if sites contaminated through agricultural activities and low-level nuclear material are given CERCLA attention, agricultural and nuclear industries should be taxed.

Reliability of the revenue base

Because of the need to increase the size of the HSRTF, new funding sources are being evaluated. Proposals have been made to expand the feedstock tax, and implement corporate and waste-based taxes. The choice of any new funding source must prove to be as reliable and predictable as the current feedstock so that the public can be assured that we've made the financial commitment to get the job done and done right. Of these revenue sources, waste-based taxes are the least stable. This is particularly true of a waste-disposal tax because the revenue base already is declining and will continue to decrease as the requirements of the Hazardous and Solid Waste Amendments of 1984, P.L. 98-616, are implemented.

Through PL 98-616, Congress mandated that certain wastes must be restricted from land disposal. Thus increasing volumes of organic waste will be treated and incinerated in an effort to destroy hazardous constituents. Land disposal of these organic wastes will be minimal, if at all practiced. The only waste that will continue to be land disposed will be dilute aqueous wastes in deep wells and inorganic wastes placed in landfills and surface impoundments. The suggestion that any form of a waste-disposal tax can comprise a primary source for HSRFT funding is not based on the reality of strict implementation of the 1984 Amendments.

Furthermore, the physical characteristics of wastes currently being generated are changing. A recent survey by the Chemical Manufacturers Association (CMA) indicated that 99 percent of the total wastes generated by CMA members is industrial wastewater. The majority of this volume is treated on-site or discharged to public wastewater treatment facilities (POTWs). In addition, the amount of waste placed in the land has decreased 43 percent between 1983 and 1985. Thus the revenue base for a disposal tax is decreasing even before Congress reauthorizes CERCLA.

In addition, a disposal tax can motivate undesirable management practices. For example, generators of inorganic wastes can further dilute aqueous wastes streams and discharge these either to POTWs or directly to surface waters. The only constraint would be the need to meet National Pollutant Discharge Elimination System discharge limits and pre-treatment standards. The Government Accounting Office (GAO) recently released a report suggesting that not all RCRA wastes are being properly managed. With the addition of a tax on land disposal, more "leakage" from the system could be expected and the revenue base would be further eroded.

If this Committee determines that a waste-based tax is necessary to augment Superfund, I urge you to collect the tax on all hazardous wastes. A waste-generation tax will accomplish two purposes. First, by taxing at the point of generation, a larger revenue base will be available. Second, it will encourage waste minimization, a goal of the 1984 Amendments. For example, those companies generating large amounts of hazardous aqueous waste would be encouraged to reduce their volume of water, rather than dilute the wastes to acceptable POTW standards.

Ease of administration

The Institute agrees that any funding source must be easily administered. The feedstock tax has not led to any administrative burdens for the Internal Revenue Service (IRS). Likewise, a corporate surcharge on U.S. businesses included in many other Superfund tax schemes would create few administrative problems. One reason for preferring a waste-disposal tax is the very few numbers of tax payers.

Opponents to a waste-generation tax state that it cannot be administered easily, due to the number of hazardous waste generators. Compared to a feedstock tax where 12 chemical firms contribute nearly 80 percent of the feedstock tax, any proposal to broaden the base of taxpayers could seem awesome. However, IRS does have the capability to administer individual and corporate income taxes. Both programs involve far greater numbers of taxpayers than would be included in a waste-generation tax.

I would urge this Committee to carefully consider the complicated administrative structures articulated in many of the current proposals for disposal taxes. These generally include complex mechanisms for granting refunds or credits for wastes receiving multiple treatment and disposal services. A waste-generation tax levied on all hazardous wastes at the point of generation would avoid duplicate taxation and make administration much less complicated. Several states (e.g., California, Florida, Kentucky, Missouri, Minnesota, Michigan, New Hampshire and New Jersey) currently employ a generator-based tax as a means of raising revenue for state Superfund programs. IRS should look to these programs as models for a federal counterpart.

There are tools available that would facilitate implementation of a waste-generation tax at the federal level. Both the Uniform Manifest and biennial generator reports can be used as audit and recordkeeping tools. The manifest is a requirement under the RCRA regulations and records the volume of wastes being sent from a generator to a RCRA facility.

Recognizing that 96 percent of all wastes are treated and disposed by the generator, and therefore are not manifested, other tools will be necessary to verify accuracy of tax receipts. EPA's currently required biennial report submitted by all generators details the volumes of waste and management practices employed. Many critics of the RCRA program have argued that the biennial report is insufficient. An annual report, they contend, is necessary if EPA is to properly enforce the federal regulations. We agree that such an annual report would be an excellent tool for administering both RCRA and a waste-generation tax for CERCLA. Finally, PL 98-616 includes a requirement that generators must certify their attempts to minimize waste generation. Such certification would document the volumes of waste generated annually and could serve as an additional tool for the IRS in administration of a waste-generation tax.

Impact on U.S. industries

Many representatives of the chemical industry have testified before both House and Senate Committees that an increase in tax rates applied to the feedstock list would have major adverse impacts. However, according to EPA, many chemicals frequently found at Superfund sites are not presently on the feedstock list. I would suggest that if the feedstock list were expanded to include the broad range of chemicals of major concern at Superfund sites, (particularly organic compounds) this additional revenue may reduce the need for higher tax rates on the current feedstock list. Likewise, the proposals for a corporate surcharge include tax rates that are very low. There is no expectation that these surcharges would adversely impact any one industrial segment of the economy. In contrast, a waste disposal tax will have an equal, if not greater, adverse impact on a diverse range of U.S. industries than the impact of an increased feedstock tax on the chemical industry. Let me elaborate.

There are two categories of waste: organic and inorganic. Organic wastes can be destroyed—inorganic wastes cannot. Inorganic compounds are natural elements found in all living and non-living components of our planet. Inorganic wastes can only be treated to immobilize the hazardous constituents before the treated product is placed in the land. Thus, an undue economic hardship is placed on those U.S. businesses generating inorganic waste. Such businesses include metal manufacturing industries, ceramic industries, primary metals industries, automotive and machinery manufacturing industries, to name only a few.

These industries are experiencing severe economic conditions today. A tax on inorganic wastes at rates presently being proposed may lead to the collapse of many vital businesses in this country. For example, current prices for treatment and disposal of electroplating wastes are in the range of $80 to $90/ton. A disposal tax of $50/ton represents a dramatic increase for the electroplater and likely will result in the closure of many electroplating businesses.

Moreover, a heavy tax on wastes with no other management option could lead to undesirable outcomes. Some waste treatment processes that decrease the level of hazard by preventing constituent migration actually increase the volume of inorganic wastes. Thus, a higher tax would be paid on less hazardous waste, resulting in disincentives for treatment. Proper treatment of inorganic wastes must be encouraged. Solidification of these wastes with subsequent placement in the land is preferable, as I mentioned earlier, to dilution and discharge to POTWs or to surface water sources.

I urge this Committee to carefully evaluate the economic impact as well as incentives for improper management of all proposed funding mechanisms. I must emphasize that no study on taxation mechanisms for the HSRTF have looked at these two potential outcomes. In studies conducted to-date (EPA, Congressional Office of Technology Assessment and Environmental Defense Fund), only two types of evaluations have been made: the economic impact of an increased feedstock tax on the chemical industry and the ability of federal or state agencies to administer disposal taxes. I reiterate, the economic and management impact of such a disposal tax on those industries generating inorganic wastes will be major.

In sum, all would agree that sufficient funds should be provided to the Superfund program. The members of the Institute are dedicating their capital to build capacity to handle these wastes. The commercial industry wants to participate in the effort to alleviate the nation's hazardous waste problem, but not as its tax collectors. I would urge Congress to review carefully the range of taxation options being floated before relying heavily on any one source. The Institute is convinced that the broader the revenue base the lower the tax rate could be and the less likelihood that such a tax would adversely impact any one sector of the economy or induce non-compliance.

POST-CLOSURE LIABILITY TRUST FUND

The PCLTF was established as a prepaid perpetual care fund for a limited class of top-quality, government-approved disposal facilities after they have been properly closed and monitored. The initial purpose of the PCLTF was to provide a means to plan for future liabilities by paying into the fund during operation of the facility. In addition, the existence of the fund assures host communities that a source of funds would be readily available to address any unforeseen future problems.

There has been debate about continuation of this fund. Some opponents still have the perception that liability totally shifts from the owner/operator of a facility to the PCLTF. Arguments have been made that existence of the fund encourages planned obsolescence of disposal facilities, and that such sites will only be designed and operated properly for as long as the operator retains liability. In addition, many opponents have argued that the existence of the fund discourages full costing of land disposal practices. None of these arguments are valid.

When one examines the full complex of laws governing the operation of hazardous waste management facilities, it is clear that the owners/operators do not transfer liability and responsibility for the RCRA site. We are required to be responsible for corrective actions during operation and for 5 years post-closure, and maintenance of the site for 30 years after operation ceases. The PCLTF only provides funds for unanticipated and future damages (after 5 years post-closure) and for maintenance of the site (beyond 30 years post-closure). While accepting responsibility for our sites, the commercial waste service industry wants the opportunity to set aside monies now while we have business income. The continuation of the PCLTF is the only method we have to plan for future financial needs.

The PCLTF does not encourage planned obsolescence. If the fund were abolished today, the level of performance as required by law would not change. Facility owners/operators still must comply with RCRA regulations as well as the recent stringent mandates provided in PL 98-616 as a condition for receiving final operating permits. An operator cannot receive a final permit unless he complies with all the RCRA regulations.

There is a real need for the PCLTF. The fund provides the public a mechanism to address future problems at a site without reliance on government funds. The revenue in the PCLTF is taxes paid by both the commercial waste service industry and on-site facility operators. Without the PCLTF, if a responsible party cannot be identified, future corrective action after closure of a facility would be possible only by drawing from general revenues or CERCLA funds. I do not believe that Congress intended CERCLA be in existence 50 to 100 years from now. It seems to be much more reassuring for the public and particularly for those communities located near land disposal facilities to have a ready source of monies available to address any environmental problems at the sites immediately, and to have this availability without question, without necessary administrative enforcement actions, and without litigation.

The Administration's bill proposes to repeal the PCLTF. The Institute testified last year urging that improvements in the current structure of the PCLTF be made. Other groups favor improvement, not simply repealing the fund. I urge you to consider improving the concept rather than repealing it. The ICWM has shared several proposals for improvement with staff of this Committee and other interested parties. They include the following items:

Clarification of tax basis.—The present law assesses a tax of $2.13/ton on hazardous waste placed in land disposal on a "dry weight" basis. Two problems can be identified. First, waste volumes in industry practice are not measured as dry weight. Second, the IRS has reported that fewer than the anticipated number of taxpayers are currently paying the PCLTF tax. I would suggest that use of dry weight as the measurement basis, and lack of guidance on who must pay, contribute to underpayment.

The Institute recommends the substitution of the industry standard for waste measurement, "wet weight ton", as the unit measure with an additional option, at the discretion of the facility owner or operator, to allow payment of the tax on measurement of total in the waste stream. If the wastes are highly dilute aqueous material, this latter method is preferred. In addition, it should be clearly stated that the tax be collected on wastes deposited at all land disposal facilities both on- and off-site, including deep wells, waste piles, land farming, surface impoundments and landfills.

Broaden application of the tax.—The present language of the law defines the universe of wastes to be those which EPA had defined as "hazardous waste" on December 11, 1980. EPA has added and is presently investigating the need for additions to its list of hazardous waste. Also in PL 98-616, Congress directs EPA to accelerate this process. Furthermore, EPA has allowed delisting of certain wastes due to treatment applications that render them non-hazardous. The law should be changed to include newly listed wastes and to remove those wastes that have been delisted.

Establish a permanent tax.—When the PCLTF was enacted as part of the CERCLA statute in 1980, the collection of the tax was inadvertently "sunsetted" along with the HSRTF tax in 1985. All parties to the authorization of the fund recognized that the tax was designed as a permanent tax within the RCRA program. Provision should be made for perpetual existence of the fund.

Limit eligibility.—Eligibility for the fund is limited to those RCRA-permitted disposal facilities that are properly closed. Since enactment of the PCLTF in 1980, EPA has issued stringent disposal permit regulations. In addition, PL 98-616 imposed further design requirements that reduce the likelihood of migration of constituents from a disposal facility, particularly landfill and surface impoundments. EPA will require RCRA permits for closure of a facility as well as its operation. In addition to proper closure requirements, the Institute recommends a limit on eligibility to those facilities that have paid into the fund for at least ten years. This requirement would exclude effectively those facilities that had evaded payment of the tax or for which evidence of failure was found because of long-term operation.

Retention of liability.—Owners and operators of disposal facilities look to the fund as the mechanism for planning long-term liability needs. There is no commercial insurance available for such coverage. This was attested to by a Treasury Department study. During recent hearings before the Senate Committee on Environment and Public Works, the insurance industry reaffirmed the limited availability of environmental impairment insurance for operating facilities. None is available after closure.

To address the concern that owners and operators should retain some liability as an incentive to go the extra mile in complying with RCRA regulations, the Institute proposes that Congress change the character of the fund to one based on the principles of insurance. It would require owners and operators of a facility to pay a deductible, and set a maximum limit on costs borne by the fund.

Remove the ceiling.—All the money used in the PCLTF is derived from dedicated industry taxes. There is no provision in the law for general revenues to compensate for any potential shortfall. When Congress enacted the PCLTF in 1980, EPA was directed to study the sufficiency of the tax rate and size of the fund. Preliminary data from the EPA study suggest that the tax rate is adequate if the fund is not "capped" at the present $200 million dollar ceiling. The Institute supports a removal of the cap provision.

Driven by the requirements of PL 98-616, the reality of the situation is that there will be fewer but higher quality land disposal facilities in operation. Estimates of current closures run between 25 and 50 percent of existing facilities. At the same time, the potential for migration of hazardous constituents beyond those facilities that met the strict requirements of PL 98-616—minimum technology, increased monitoring, and restrictions of certain wastes from land disposal—will not approach the conditions seen at Superfund sites. Early detection will eliminate large-scale remedial actions reducing the cost of future response. Thus, sufficient funds to cover these sites can be assured. And in the unlikely event that a facility exceeds the limits of PCLTF coverage and it is determined that the owner/operator is insolvent or has disappeared, the fund rather than the government could pick up the tab for cleanup.

Let me make one final point. It is essential that the administration of the PCLTF remain under the purview of the federal government; it is the only entity whose existence 50 or more years in the future can be assured. If one reviews the range of companies in operation in the early 1900's, very few of them are still in operation today. Moreover, the federal government is the only entity that can compel all owners/operators to contribute to the fund. Without mandatory contribution, a competitive pricing advantage is given to less responsible companies that have no intention of remaining in the market long enough to risk their assets should problems develop after closure of their sites.

I urge Congress and this Committee to recognize the good business sense which forms the basis for this fund. The framework has been initiated; funds are being collected. I cannot urge too strongly that it is far more prudent action on the part of Congress to legislate improvements to the fund rather than to eliminate the only mechanism available to address potential future problems.

Mr. Chairman, as this Committee continues its deliberations on legislation to reauthorize CERCLA, I hope that you give serious consideration to the issues I have raised. The Institute continues to stand ready and willing to provide you and your staff constructive and helpful input on developing specific provisions. I thank the Committee for this opportunity to appear and express our views on this matter and welcome any questions you might have.

Mr. ANTHONY. Thank you, Ms. Pirages. Next we will hear from Mr. Hoffman.

STATEMENT OF HOWARD J. HOFFMAN, ESQ., WASHINGTON, DC

Mr. HOFFMAN. Mr. Chairman, my name is Howard Hoffman and I am a tax attorney in private practice here in Washington, DC. I have been studying the workability of the waste-end tax for some time. This testimony is submitted on my own behalf, not on behalf of any clients, my law firm, or any other organization.

I would like to thank you very much for the opportunity to testify today.

My testimony will review some of the workability aspects of the waste-end tax proposals and will make some suggestions to maximize workability. I do not intend to take a position on whether or not the waste-end tax as a whole should be adopted, only to discuss its workability.

I believe that the waste-end tax can be structured to be fairly well workable. The main reason that the tax can be so structured is that it can be closely tied to the RCRA regulatory system so that most of the determinations required to be made under the waste-end tax would already be required to be made under RCRA and are already subject to RCRA recordkeeping requirements. These determinations primarily include whether a substance is hazardous waste; the quantity of the hazardous waste; and the facility in which it is managed.

Nevertheless, complexities are inherent in any form of the waste-end tax. A principal reason is that the waste-end tax may require tracing the history of waste as it moves through different management facilities. Complexity also arises because both the RCRA regulatory system upon which the tax is based, and the hazardous waste industry are highly complex and rapidly changing. The fact that the waste-end tax includes some complexities accentuates workability concerns, and argues in favor of streamlining the tax as simply as possible. Now, I would like to discuss a few specific workability concerns.

The first has to do with recordkeeping requirements. No matter how the waste-end tax is structured, it will create some complexity because it will involve some tracing of hazardous waste as it moves through different management processes. Moreover, complexities may arise in more complicated waste management methods, such as when nonhazardous substances are added to hazardous wastes, or when fungible hazardous waste moves in and out of different storage or treatment processes. Because the recordkeeping requirements may be complicated. I believe that it is important that Congress give the IRS authority to permit, when necessary, reasonable estimates of the amount of hazardous wastes that are subject to tax or eligible for treatment credit or exemption.

The second point concerns whether illegally disposed waste should be subject to tax? This is a difficult issue, but on balance, it is recommended that illegally disposed waste not be subject to tax. This is a position that the administration has adopted and this position would significantly streamline the waste-end tax, because taxing illegal disposal could greatly increase the potential universe of taxpayers, stretch IRS audit resources and result in large measure in an unenforced tax. It is true that failure to tax illegal disposal may create psychological problems by giving the appearance that the tax system is encouraging illegal disposal.

The answer to this question is not easy, but I believe that the answer lies in strong RCRA enforcement and substantial RCRA penalties for illegal disposal.

The third point has to do with qualifications for the treatment credit or exemption. If a treatment exemption is adopted, it is recommended that the principal criterion for the exemption be simply that the hazardous wastes must be converted into nonhazardous wastes within the specified period of time, such as a year. Some of the legislative proposals add additional qualifications, such as that the treatment process must meet certain EPA requirements or other requirements. In general, these additional qualifications do not appear to be necessary and may unduly burden the IRS.

The last point that I want to make very briefly, has to do with effective dates. The current legislative proposals provide that the waste-end tax would take effect on October 1, 1985, or soon thereafter. Effective administration of the waste-end tax, because it is a new tax, may require promulgating IRS regulations; developing tax forms, and other taxpayer guidelines; and would require the affected industry to learn about its new tax obligations. If the waste-end tax is enacted much later this year, the early effective dates included in the current legislation may not permit accomplishing these tasks before tax obligations arise. Accordingly, if a waste-end tax is not enacted until later this year, consideration should be given to delaying the effective date of the tax for a longer period of time, perhaps 6 months or longer, in order to allow both the IRS and the affected industry to prepare to meet their obligations.

Thank you very much, Mr. Chairman.

[The prepared statement follows:]

STATEMENT OF HOWARD J. HOFFMAN, ESQ., WASHINGTON, DC

Mr. Chairman and Members of the Committee: I am a tax attorney in private practice in Washington, D.C. I have an interest in environmental excise taxes in general and the Superfund taxes in particular. The present testimony is submitted on my own behalf, and not on behalf of any clients, my law firm, or any other organization.

Thank you very much for the opportunity to testify today. This testimony will review some of the workability aspects of the current waste-end tax proposals, and will make some suggestions to maximize workability. This testimony takes no position on whether the waste-end tax should or should not be adopted, nor on what the rates of tax should be.

I. OVERVIEW OF WORKABILITY OF THE WASTE-END TAX

The waste-end tax can be structured to be fairly well workable and administrable. The main reason is that the tax can be closely tied to the SWDA[1] regulatory system so that most of the determinations required to be made under the waste-end tax are already required to be made under the SWDA regulatory system, and are already subject to SWDA recordkeeping requirements. These determinations primarily include whether a substance is taxable as hazardous waste, the quantity of the waste, and the unit or facility in which it is managed.

Nevertheless, complexities are inherent in any form of the waste-end tax. Principal reasons for these complexities are that both the SWDA regulatory system upon which the tax is based and the hazardous waste industry are highly complex and rapidly changing. An additional level of complexity arises because in most cases, the individual States administer and enforce the SWDA regulatory system.

The fact that the waste-end tax includes complexities accentuates workability and administrability concerns, and exerts pressure in favor of structuring the tax as simply as possible. Even so, the complexity and rapid evolution of the hazardous waste industry suggest that attention should be paid to structuring the tax to avoid inequities and to avoid imposing unintended obstacles to improvements in hazardous waste management techniques.

The following is a discussion of certain specific aspects of the proposals that raise workability concerns.

II. SPECIFIC WORKABILITY CONCERNS

1. "Freezing" the definition of hazardous waste

The legislative proposals subject to tax "hazardous waste" as defined under SWDA § 3001. In general, the legislative proposals would "freeze" this definition so that only substances listed or identified as "hazardous waste" on the date the tax is enacted would be subject to tax.[2] Substances that the Environmental Protection Agency ("E.P.A.") lists or identifies as hazardous waste following the date of enactment would not be subject to the tax absent further congressional action.[3] E.P.A. may be expected to promulgate new identifications of hazardous waste each year.[4]

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[1] References to SWDA herein are to the Solid Waste Disposal Act, as amended.

[2] See, e.g., the Administration's revised proposal, H.R. 2208 (Reps. Hall and Fields). But see, e.g., H.R. 1775 (Rep. Moore).

[3] The principal purpose of "freezing" the definition of hazardous waste in this manner is to restrict the universe of taxable hazardous waste to that which is presently known and to prevent new E.P.A. identifications of substances identified as hazardous waste from imposing unanticipated tax burdens upon the affected industry.

[4] See 40 CFR 17789-90 (April 29, 1985).

Failing to give tax effect to new E.P.A. identifications of hazardous waste may create complexity as over time, the definition of "hazardous waste" for tax purposes diverges from the definition of "hazardous waste" for SWDA regulatory purposes.[5] To reduce this complexity, Congress should be prepared to revisit this matter periodically—such as during consideration of other miscellaneous tax measures each year—to "update" the definition of "hazardous waste" for tax purposes including as taxable hazardous waste new E.P.A. identifications.

2. Tax on illegal disposal

The Administration has proposed to levy the tax on only hazardous waste that is received at certain regulated hazardous waste management units ("Permitted Units").[6] Other legislative proposals would also subject to tax hazardous waste that is not received at Permitted Units, but that is required to be received at such Units.[7] Thus, these other legislative proposals, but not the Administration's proposal, would subject to tax hazardous waste that is illegally disposed.[8]

Although the issue of whether to tax illegally managed hazardous waste is difficult, it is recommended that the Administration's position be adopted, and that illegally managed waste not be subject to tax. Not subjecting to tax illegally managed waste would significantly streamline the waste-end tax. Levying the tax on illegal waste management could (i) substantially increase the potential universe of taxpayers,[9] (ii) stretch Internal Revenue Service ("I.R.S.") audit resources, and (iii) result in large measure in an unenforced tax. Unenforced taxes tend to decrease respect for the tax system as a whole.

It must be acknowledged that failure to tax illegal waste management may create psychological problems by giving the appearance that the tax in effect encourages illegal waste management. The answer to these concerns lies in strong SWDA enforcement and substantial penalties for illegal waste management. This point should be emphasized: exempting illegal waste management from tax may require greater SWDA enforcement and application of penalties.

3. Availability of treatment exemption

The legislative proposals provide two different approaches to identifying the taxable events: The first is a broad-based approach under which all hazardous waste would be subject to tax if managed in Permitted Units, with tax credits available to avoid multiple taxation.[10] The second approach would provide an exemption or a credit for hazardous waste that has been neutralized—i.e., converted into nonhazardous waste—within a one-year period.[11]

Each approach creates some complexity because each approach involves some tracing of hazardous waste as it moves through waste management processes. In general, the records that would make such tracing possible are already required to be kept under SWDA.[12] However, the imposition of a tax would increase paperwork burdens. Moreover, some complexities may arise when, for example, nonhazardous substances are added to the hazardous waste or when fungible hazardous waste moves in and out of different storage or treatment units.

Which of the two approaches is more complex depends in large measure on the structure of the hazardous waste industry. The broad-based approach, as proposed by the Administration, has the disadvantage of bringing more hazardous waste into the tax system, and of requiring a complex system of credits to avoid multiple taxation as waste moves from one Permitted Unit to another.[13] An exemption or credit for waste that is neutralized within one year may reduce this complexity by eliminating from the tax system a substantial amount of hazardous waste.

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[5] For example, confusion may result as to which SWDA regulated hazardous wastes are subject to tax.

[6] Under the Administration's proposal, hazardous waste would be subject to tax upon receipt at a permitted or interim status hazardous waste management unit that is in a permitted or interim status facility. Such units are referred to herein as "regulated hazardous waste management units" or "Permitted Units". In addition, exported waste and ocean-disposal waste would also be subject to tax. See S. 972 (Sen. Stafford).

[7] See, e.g., H.R. 2018 (Reps. Schneider and Wyden); H.R. 2022 (Rep. Sikorski).

[8] H.R. 2208 (Reps. Hall and Fields) adopts an approach comparable to the Administration's.

[9] This potential universe of taxpayers would include not only persons who deliberately dispose of hazardous waste illegally, but also persons who manage hazardous waste in units or facilities that are exempt from permit or interim status requirements if such units meet certain conditions, but that may fail to meet those conditions. Examples include farmers disposing of pesticides, see 40 CFR 262.51; and generators accumulating waste for specified short periods of time, see 40 CFR 262.34.

[10] See S. 972 (Sen. Stafford, by request of the Administration); H.R. 2022 (Rep. Sikorski).

[11] See H.R. 2208 (Reps. Hall and Fields); H.R. 1775 (Rep. Moore); H.R. 2018 (Reps. Schneider and Wyden). H.R. 2208 is the same as S. 14 (Sens. Moynihan and Bentsen) and S. 596 (Sen. Bradley). S. 14 and S. 596 apparently have been revised to levy the tax on hazardous waste that has remained in treatment for one year or longer, as noted in footnote 14 below.

[12] See 40 CFR 264.73(b)(1); 40 CFR 265.73(b)(1) (the operating log requirements).

On the other hand, an exemption or credit for waste that is neutralized within one year creates substantial complexities in the case of hazardous waste that remains in existence for one year or longer and that is subject to complex forms of waste management. The management history of such waste must be traced closely to determine the length of time that the waste has remained hazardous.[14]

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[13] In certain cases involving complex waste management, troublesome issues arise under the tax-and-credit mechanism. The following are examples:

a. Mixed Waste That Includes Non-previously Taxed Substances.—There are many circumstances in which waste that has been subject to tax becomes mixed with substances that have not been previously subject to tax. Under these circumstances, it may be necessary to devise methods to assure that no credit is allowed with respect to the non-previously taxed substances. These methods may entail significant complexity, and may require reasonable estimates of the amount of creditable waste and flexible administrative procedures. Some of the more troubling circumstances are described below:

(1) Recirculated Wastewater.—In some cases, hazardous wastewater may be recirculated into and out of a treatment unit. The amount of wastewater that has been subject to tax upon its initial receipt in the treatment unit should be eligible for the credit upon its reintroduction into the treatment unit. A complexity arises if the plant mixes new water with recirculated water to carry waste into the treatment unit. Under these circumstances, it may be necessary to determine which portion of the wastewater received at the treatment unit is new and has not previously been subject to tax, so that no credit is allowed with respect to such portion.

A similar problem arises if the treatment unit receives rainfall that is circulated into the plant and then back into the treatment unit.

(2) Addition Of Nonhazardous Substances During Neutralization Process.—Assume the following, under the Administration's proposal.

Day 1.—10 tons of hazardous waste are generated and placed in (nontaxable) short-term storage.

Day 2.—The 10 tons are placed in treatment at a permitted unit. $60 in tax is paid.

Day 3.—As part of the treatment, 2 tons of nonhazardous substance are added to the waste. At the conclusion of the treatment, 9 tons of hazardous waste have been neutralized, and 3 tons of hazardous residue remain.

Day 4.—The 3 tons of hazardous residue are placed in a permitted disposal unit. A tax of $18 is paid.

Determining the amount of credit that is available on Day 4 is difficult. It is likely that a portion of the hazardous residue consists of the nonhazardous, non-taxed substances that were added during treatment. Allowing a credit for all 3 tons—$18—would allow a credit for substances that were not subject to tax. On the other hand, failure to allow a credit may raise a difficult administrative problem in determining the amount of non-previously taxed substances in the residue.

(3) Other Waste Management Methods.—The complexity of the hazardous waste management industry leads to numerous variations of this problem. For example, treatment processes may include passing waste over filters, and result in spent filters that are considered hazardous waste and that must be disposed. Because the filters were not previously subject to tax, an issue arises as to whether a credit should be available for the weight of the filters.

b. Complex waste management that involves different tax rates.—Another complexity arises in the case of complex waste management that involves different tax rates, as under the Administration's proposal. To illustrate, assume the following management history:

Day 1.—One ton of hazardous waste is generated. The generator immediately places the waste in taxable land storage, and pays a tax of $35.

Day 100.—The one ton of waste is transferred off-site to a treatment, storage and disposal facility ("TSD Facility") for land disposal. At first, however, the TSD Facility places the waste in non-land storage. The TSD Facility pays tax of $6. A credit of $6 is allowed to the generator.

Day 200.—The one ton of waste is placed in a land disposal unit. The TSD Facility pays tax of $35.

Under the Administration's proposal and other bills, issues arise as to the amount and availability of the credit. Should the TSD Facility be given a $6 credit (for the amount of tax it paid upon storing the waste) and the generator be given an additional $29 credit (so that the total amount of credit the generator would receive would be $35)?

Failure to allow the generator an additional $29 in credit would mean that a total tax of $64 ($35 plus $6 minus $6 plus $35 minus $6) would be paid with respect to the waste. This amount of tax may be regarded as excessive. As a result, it may be advisable to allow credits in sufficient amounts to avoid all double taxation, i.e., to allow the $29 credit to the generator. It should be recognized that this result may give rise to an administrative burden because it may be necessary to trace the entire management history of the waste and to provide refunds in more than one installment.

[14] Several proposals—S. 14 (Sens. Moynihan and Bentsen) and S. 596 (Sen. Bradley)—apparently have been revised to levy the tax on hazardous waste that has been disposed of or that has remained in a storage unit or in treatment for one year or longer. See Joint Committee on Tax-

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On balance, determining which of the two approaches is the simplest largely depends on the structure of the hazardous waste industry and how the industry may change in the future. If the great bulk of hazardous waste is either neutralized or disposed of within one year, the treatment exemption or credit may prove simpler. However, if substantial amounts of hazardous waste remain in storage or treatment for one year or longer and are subject to complex forms of waste management, the proposals for a treatment exemption or credit may add complexity. Additional input from the hazardous waste industry may provide helpful information in this regard.

Regardless of the approach adopted, it may be advisable to allow the I.R.S. authority to permit reasonable estimates of, and to develop flexible administrative procedures regarding, the amount of hazardous waste subject to tax or eligible for a credit or exemption.

4. Qualifications for treatment credit

The proposals for an exemption or credit for hazardous waste that is treated within one year generally place certain qualifications on the availability of such exemption or credit. For example, H.R. 2018 (Reps. Schneider and Wyden) allows the credit only if the owner or operator of the treatment unit complies with all nonprocedural Federal or State requirements concerning hazardous waste management. H.R. 1775 (Rep. Moore) allows the credit only if hazardous waste is neutralized in a process that meets "detailed performance criteria" established by the E.P.A. and that has a destruction efficiency for the hazardous waste involved that is at least equal to the destruction efficiency applicable to incineration (in general, 99.99 percent, see 40 CFR 264.343).

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ation Staff Pamphlet On Background And Issues Relating To Superfund Reauthorization And Finance, To Be Discussed At Senate Finance Committee Hearings April 25-26, 1985. Some examples of complexities that may arise under these proposals are discussed below. As in the case of the tax-and-credit mechanism discussed above, it may be advisable to allow reasonable estimates and flexible administrative procedures in determining the amount of waste subject to tax.

a. Transfer Of Waste Among Storage and Treatment Facilities—Tacking.—Under S. 14 and S. 596, apparently as revised, it is unclear whether the tax would apply only in the case of waste that remains at the same storage or treatment unit or facility. An obvious avoidance potential exists if the tax is limited to waste that remains within one unit or facility—waste could be treated within that unit for 11 months, and then transferred to another treatment unit for 11 more months, with no tax liability arising. (Transfer of waste to more than one storage or treatment unit appears to be a common industry practice.)

Accordingly, tacking of waste storage or treatment periods should be required. Tacking would have the effect of subjecting to tax waste that is found in a specified storage or treatment unit in hazardous form one year or longer after the waste first entered any specified storage or treatment unit.

Although necessary to eliminate tax avoidance, tacking carries with it the complexity of having to trace the management history of waste through different units. This task would entail compiling and reviewing the operating records of each unit through which the waste passes. This administrative difficulty is exacerbated if the waste is managed in different facilities owned by different persons.

The complexity may increase if hazardous wastes from different treatment processes are mixed and subsequently managed together.

b. Creation Of Residues.—Many treatment processes neutralize a portion of the waste, and result in a hazardous residue. An issue arises as to whether the residue should be treated as coming into existence—for purposes of the one-year period—at the time it is created or at the earlier time that the one-year period began to run for the waste from which the residue arose.

In many cases, it would be most administratively convenient to consider the residue as having come into existence on the date it was created. This method would eliminate the need to trace the entire management history of the waste.

However, other considerations suggest that residues should be considered to be a continuation of the waste from which they arose. First, the environmental threat represented by the waste continues from the time it comes into existence to the time the residue is managed. Second, defining residue may be difficult, and as a result, allowing residues a "fresh start" on the running of the one-year period may give rise to an avoidance potential. The principal issue appears to be the extent to which hazardous waste must be changed to be considered a residue. For example, when hazardous waste is incinerated, the ash that remains can clearly be considered a residue. However, assume that wastewater is placed in a surface impoundment, the solids are allowed to settle to the bottom in the form of sludge, and the sludge is dredged out. It is unclear whether the sludge should be considered a residue. If it is not, assume that the wastewater is chemically treated in some manner during the settling process, and the sludge is chemically changed as a result. It is unclear how much changed the sludge must be to be considered a residue for purposes of obtaining a "fresh start" on the running of the one-year period.

c. Continual Flow Treatment Units.—Particularly troublesome tracing problems arise in the case of treatment units that involve a continual flow of portions of waste in and out of the unit. Under these circumstances, it may be difficult to determine the amounts of waste that have remained in existence for one year or longer. It appears that allowing reasonable estimates may be necessary.

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If a treatment exemption or credit is adopted, it is recommended that the principal criterion for the availability of the exemption or credit be simply that the hazardous waste must be converted into nonhazardous waste within the specified time. Additional qualifications, such as those found in H.R. 2018 and H.R. 1775, do not appear to be necessary. Moreover, such qualifications in effect may impose upon the I.R.S., in administering the exemption or credit, the burden of enforcing SWDA or other E.P.A. regulatory requirements.

5. Wet Weight v. Dry Weight

A continuing controversy concerns whether the quantity of hazardous waste subject to tax should be measured by the "wet weight" of the waste, or whether an election to use "dry weight" should be available.

The E.P.A., in its recently completed "G" Study, has concluded that the wet weight approach would be simpler than the dry weight approach, and has advanced persuasive arguments in favor of this position:

Unit of Taxation: A critical variable affecting the simplicity of the tax is the unit of taxation. The tax could be based on the weight or volume of wastes, or some variant of these such as dry weight. If the tax is based on a unit of measurement that conforms with existing practice and is simple to calculate, the tax will be more effective than if new measuring and testing procedures must be developed and implemented. A study performed for E.P.A. suggests that dry weight may be more difficult than wet weight to administer as a unit of taxation.[15] Examples of problems included:

Dry weight would have to be defined as either the non-water weight of the waste or its solids content. A solids content tax basis would make many highly mobile solvents tax exempt, whereas a non-water definition would require fairly sophisticated waste analyses to determine the nonwater portion of the waste.

Wastes could be mixed together or diluted with water to reduce tax liability, and I.R.S. or E.P.A. could not verify taxes owed. Such incentives to dilute exist when

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To illustrate, assume that wastewater containing solids flows through a surface impoundment in the following manner: (Assume that at the beginning of the year, the surface impoundment is empty.)

Year 1, Day 1.—One ton of wastewater is piped into the unit. Some of the solids settle to the bottom.

Year 1, Day 100.—One ton of wastewater is piped into the unit, and some of the solids settle out.

Year 1, Day 200.—One ton of wastewater, containing some solids, is removed from the impoundment.

Year 2, Day 1.—One ton of waste-water including some solids, remains in the impoundment.

It will be cumbersome to determine what portion of the solids and what portion of the water that remain in the surface impoundment should be attributed to the wastewater that came in on Year 1 Day 1, and thus become subject to tax on Year 2 Day 1.

d. Evaporation or Leaching; Rainfall.—The difficulties described immediately above in tracing hazardous waste become exacerbated if the treatment unit is open to the elements, and thus allows evaporation (or leaching) and absorbs rainfall. For example, assume in the above example that during the course of Year 1, some of the water in the impoundment evaporated, some of the solid particles were also released to the air, and the impoundment collected rainfall. Assume further that on Year 2, Day 1, ½ ton of wastewater remained in the impoundment, instead of 1 ton. Determining the portion of the remaining water and solids that were placed in the unit on Year 1 Day 1 would prove more cumbersome.

e. I.R.S. Ruling.—In the case of a treatment process that generally is concluded within one year, it may be advisable to permit the I.R.S. to issue a ruling that waste treated in such process is not subject to tax. Such a ruling may avoid the necessity of tracing the management history of the waste. Arguably, for reasons of administrative convenience, the waste should remain tax-free even if in certain instances the treatment is not completed within one year. Material changes in the treatment process could be considered as grounds for revoking the ruling or as requiring a supplemental ruling.

f. Addition Of Nonhazardous Substances.—Another difficult issue arises with respect to when nonhazardous substances that are added to hazardous waste should be considered as coming into existence for purposes of the one year period. For example, assume that as a part of the treatment process, nonhazardous substances are added to hazardous waste, and a portion of the waste is neutralized and a portion remains as residue. In some cases, part of the residue may consist of the nonhazardous substances. It is unclear whether the nonhazardous substances should be considered to come into existence on the day that the one-year period for the hazardous waste began to run, or on the day that the nonhazardous substances were added to the residue.

[15] Pope-Reid Associates, "Effects of Changing the CERCLA Tax Base," prepared for Offer of Policy Analysis, EPA, December, 1983.

there are high differential tax rates among disposal methods and especially when wastes are put into an underground injection well and cannot be sampled.

Mistakes in calculating dry-weight could contribute to significant revenue losses. The dry-weight of a waste could vary significantly from shipment to shipment, requiring frequent waste sampling and analyses to calculate the proper tax liability. Waste-management facilities must perform tests for either the solid content of waste or its nonwater content in order to report under the Post-Closure Liability Trust Fund tax, but E.P.A. currently has no standard procedure for testing for dry-weight.

Using a wet-weight ton basis would reduce or eliminate a number of factors that could contribute to an error in calculating the tax. This common standard of measurement is frequently used by waste management facilities to maintain records and report information to E.P.A. Finally, a wet-weight tax would not result in additional testing requirements for taxpayers and would eliminate the need to develop and implement testing protocols, which would have to be incorporated into the implementing regulations.[16]

In large measure, these administrative concerns over dry weight would remain even if reporting on a wet weight basis is required but taxpayers are allowed to elect to report on a dry weight basis. The reason is that (i) as in the case of other elections in the tax law, taxpayers may consider themselves obliged to compute their tax liability under both a wet weight and dry weight approach to determine which results in the lowest tax liability, and (ii) it would still be necessary to develop the definition of, and the testing requirements for dry weight, and to audit taxpayers to assure that the reporting under dry weight comported with such guidelines.[17]

6. Addition of nonhazardous substances to hazardous waste

There are numerous circumstances under which nonhazardous substances may be added to hazardous waste as part of the waste management process. Such nonhazardous substances may then become hazardous waste, for example, by virtue of being mixed with hazardous waste.[18] For example, (i) hazardous waste may be treated by adding neutralizing agents or by filtering the waste through clay filters, or (ii) liquid hazardous waste may be solidified for purposes of disposal by the addition of concrete-like material.

Under the waste-end tax proposals, the added nonhazardous substances would be considered hazardous waste and subject to tax. Criticism may result that the tax would discourage important waste management methods that entail the addition of nonhazardous substances.[19]

As a result, consideration should be given to exempting from tax the weight of nonhazardous substances that are added for waste management purposes, at least in the case of the most significant of these areas, such as the addition of solidification materials for disposal purposes. It must be acknowledged that the complexity of the waste management industry and the difficulty of justifying exemptions for certain additions of nonhazardous substances but not others may render the fashioning of such an exemption difficult.

7. Effective date

The current legislative proposals, apparently motivated by the need to raise revenue, provide that the waste-end tax would take effect on October 1, 1985, or soon thereafter.[20]

Effective administration of the waste-end tax may require (i) the promulgation of I.R.S. regulations defining and interpreting certain aspects of the statute, (ii) the development of tax forms and other taxpayer guidelines; and (iii) the affected industry to familiarize itself with its new tax obligations. The early effective dates that are included in the current legislative proposals may not permit the accomplishment of these tasks before tax obligations arise. In this case, the waste-end tax may get off to a rocky start.

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[16] Office of Solid Waste and Emergency Response, U.S.E.P.A., "The Feasibility And Desirability of Alternative Tax Systems For Superfund—CERCLA Section 301(a)(1)(G) Study" (December 1984).

[17] However, such an election system would avoid the harsh impact on smaller quantity generators that would result if reporting on a dry weight basis were required and if it were not feasible for such generators to compute dry weight.

[18] See 40 CFR 261.3(a)(2)(iii)-(iv).

[19] By the same token, the tax may cause changes in waste management techniques solely for tax purposes, such as adding nonhazardous substances to hazardous waste after the waste has been received at a permitted unit (e.g., during the treatment or disposal process), instead of before such receipt.

[20] See, e.g., S. 972 (Sen Stafford, by request of Administration) (October 1, 1985); H.R. 1775 (Rep. Moore) (same); H.R. 2018 (Reps. Schneider and Wyden) (January 1, 1986).

Accordingly, consideration should be given to delaying the effective date of the tax for a longer period of time, perhaps six months, in order to allow both the I.R.S. and the affected industry to prepare to meet their obligations.

Mr. ANTHONY. Thank you, very much, Mr. Hoffman. Next we will hear from Richard Fortuna.

STATEMENT OF RICHARD C. FORTUNA, EXECUTIVE DIRECTOR, HAZARDOUS WASTE TREATMENT COUNCIL, WASHINGTON, DC

Mr. FORTUNA. Thank you, Mr. Chairman. My name is Richard Fortuna and I am the executive director of the Hazardous Waste Treatment Council. We are a national association of hazardous waste treatment and management firms that share a common commitment to the primary use of treatment technology and the restricted use of land disposal in the management of hazardous wastes.

I should note, Mr. Chairman, that ENSCO in El Dorado, AR was one of the founding members of the council at its inception in 1982.

The council represents firms that are engaged in the full spectrum of activities; including, incineration, reclamation, alternate forms of thermal destruction as well as appropriate forms of land disposal. And we were the lead industry group in the reauthorization of RCRA last year which imposed many new restrictions on land disposal and closed many of the loopholes in the current RCRA system. And in short, the members of the treatment council and firms like it, are what we have heard a lot about here this morning, from other witnesses, or namely, we are the purported beneficiaries of these so-called waste base tax schemes.

If we have one message to deliver to the committee this morning, it is that we do not need these kinds of incentives, nor do we want them. It is true that they provide incentives, but they beg the larger question of incentives to do what and incentives for whom? We have concluded that as revenue measures, waste-based approaches are marginal at best, and as incentive measures, they are unmitigated disasters doing more to pervert the incentives for proper treatment than to promote them. If these waste-based proposals have made any contribution, it is in the fact, that they really identified and highlighted the many deficiencies in our current RCRA system. Suffice to say at this point that there are more waste facilities and generators that are exempt from coverage under RCRA than are subject to it.

Now, the 1984 RCRA amendments that I mentioned that we worked very hard on, do establish, indeed, incentives and indeed, requirements for proper management; close many of the loopholes; and in fact, proscribe many land disposal practices. But, Mr. Chairman, there is a very important point here, I think that it is critical to note though, that as good as these amendments are, and as sound as they are and as much as we believe that they are going to work, we are only at the beginning of implementing these amendments. Any tax-based imposed today using the RCRA is going grandfather in all the RCRA system—its good points, plus its loopholes, limitations, warts and all, if you will. If I can draw an analogy, the RCRA system of today is much more of a colt, if you will, than a Clydesdale and to hook the revenue wagon of Superfund to this kind of a system today, is not going to get you to the station. If we had no RCRA reauthorization in 1984, to close these loopholes or if we did this for 1990 and we had fully implemented the law, then our position may well be different. But the incentives provided by a waste and fee system are only as strong as the weakest link in the RCRA provisions and these are, indeed, numerous.

I would like to touch on a few at this moment. If there is one axiom in the management of hazardous waste, it is that they are like water running downhill—they will flow to the pathway of least cost and least regulatory control.

I would like to examine five of these pathways very briefly. The first is sewer disposal. Hazardous waste disposed of into a public sewer line right now, is completely exempt from RCRA and there are no standards in the Clean Water Act right now, except for one category, to cover these discharges. The CMA survey that was mentioned earlier showed that in 1983, 93 CMA members alone, disposed of up to 50 million tons of hazardous wastes into sewer lines.

Second, is direct surface water discharge of hazardous wastes. These are indeed, subject to RCRA and managed impoundments, and they are subject to toxic discharge limitations under the Clean Water Act, but the vast majority of this management occurs in impoundments, which in many cases, are leaking. To exempt such practices or to subject them to the tax of only 25 cents a ton as the administration's bill does, will only encourage their use.

And there are several other exemptions for burning and blending, in nonincinerator devices; burning waste in nonincinerator devices are not subject to regulation. Emission control dust can be mixed with fertilizer. And indeed, right now, dioxin is not even a hazardous waste. If we enact the current system of RCRA and adopt that as the waste management system for a waste-end tax, ethylene dibromide, pesticides such as the carbomates, which was the product being manufactured in Bhopal, dioxin and many others are not even going to be included as hazardous wastes.

I would like to touch on just a few other brief issues, Mr. Chairman. I realize that the time is short, but this will take just about another 60 seconds, to illustrate some of the folly of the waste end proposals that have been put forward. What I would like to focus on are what I call the two ruses of the Superfund Reauthorization of 1984. And those are the waste water issue as well as the dry weight ton issue.

I have before me here three common household products. And first is the Ortho-Insect Plant Spray. If you look on the back it is loaded with precautions. It has a special emergency number to call in the case of a problem, but when you look at the content, it says, 99.39 percent inert ingredients—the same basic percentages apply to the mealey bug spray here. Now, another common household product here is tincture of iodine—skull and crossbones on the cover, found in many medicine cabinets across the country, but when you look at the label and find out how much active iodine, how much toxic component you have in here, it is 2 percent. The point here being, Mr. Chairman, that wastewaters, when someone says that something is diluted or something is a wastewater, that term is being very much used as a term of art and it is very much in the eyes of the beholder. Something can indeed, be dilute, but be very deadly at the same time. In fact, if you look at the Code of Federal Regulations that lists hazardous wastes, fully 27 out of the 88 listed wastes are wastewaters.

The second issue is the dryweight ton issue. And if you take a 5,000-gallon tanker truck of say a very strong acid that is coming into a deep well facility, and you were to tax that at a say, $5 per wet weight ton basis, that truck would pay about $125 in tax. If, however, you tax that same truck coming into that facility at $5 per dry weight ton, the tax would be close to 36 cents. There is no relationship whatsoever between dry weight and toxicity. The Superfund sites when they are cleaned up—you do not just clean up the dry weight portion, you clean up everything. When aquifers are closed and unfit for human consumption, frequently they have very little more than 50 parts per billion, or indeed, are basically water as well.

So I would just ask that the committee keep those points in mind, when it considers this matter.

As one final point, I would just urge that if the committee does go to a tax scheme beyond just the general revenues and fee stocks, we would urge the adoption of a broad-based tax such as the net receipts tax, which while unpleasant to many of our members, at least does not have have all the uncertainties and perversities that would be inherent in any waste-based fee system. Thank you, very much.

Mr. ANTHONY. Thank you, very much.

[The prepared statement follows:]

STATEMENT OF RICHARD C. FORTUNA, EXECUTIVE DIRECTOR, HAZARDOUS WASTE TREATMENT COUNCIL

Mr. Chairman, members of the Committee I welcome the opportunity to testify this morning on behalf of the Hazardous Waste Treatment Council (HWTC) regarding the funding provisions of the "Superfund" or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

I. BACKGROUND ON THE TREATMENT COUNCIL

The Hazardous Waste Treatment Council (HWTC) is a national association of commercial firms that share a common commitment to the primary use of treatment and recycling technology in the management of hazardous wastes, and to the restricted use of land disposal. The Council is the largest organization representing the interests of commercial hazardous waste treatment and management firms. Our 40 member companies operate facilities in 48 states and represent the full spectrum of established and emerging treatment technologies and management methods including incineration and other forms of thermal destruction, reclamation, fixation, activated carbon treatment, land disposal after proper pretreatment, and remedial site investigation and cleanup.

The Treatment Council was the lead industry group in the 1984 amendments to the Resource Conservation and Recovery Act (RCRA), the nation's basic hazardous waste management authority. The 1984 RCRA amendments (see attachment for summary of key provisions) represent a watershed restructuring of the nation's waste management policies.

These amendments establish a program to truly prevent the creation of additional "Superfund" sites by initiating a program of restrictions and minimum technology requirements on land disposal and beginning the process of closing of numerous legal loopholes that have allowed the "legal dumping" of hazardous wastes for many years. In addition, I personally had the privilege to work on the original "Superfund" bill while serving on the staff of the House Energy and Commerce Committee.

II. OVERVIEW OF TESTIMONY

My testimony this morning will focus on the impacts and components of a waste-based fee system. The Members of the Hazardous Waste Treatment Council and related firms are the purported beneficiaries of waste-based tax schemes that seek to raise additional revenue, discourage land disposal, and encourage the use of alternative and protective treatment methods, such as those practiced by Council members.

After much internal examination; independent study (provided to the Committee); and review of various state programs, last year's CERCLA reauthorization, and current waste-based proposals we have concluded: as revenue measures waste-based approaches are marginal and unreliable, as incentives measures for treatment they are unmitigated disasters doing more to pervert the incentives for permanent treatment than to promote their use. This is due to their inconsistency with the policies of the 1984 RCRA amendments (see attachment), their sole focus on land disposal as the tax base, their failure to tax many of the wastes and practices or loopholes that are currently excluded from RCRA, their de facto exemption of deep well injection, and their taxation of treatment methods.

If waste-based proposals have made a contribution to national hazardous waste policy it is their demonstration of the many deficiencies in coverage of the current RCRA system, and in turn the folly of its use as a revenue base for CERCLA. While it is true that these proposals provide incentives, the real questions are incentives for whom and incentives to do what? When tied to the current RCRA system, one is providing incentives to continue "legal dumping" practices that are the functional equivalent of illegal dumping, and which have been targeted for elimination over the next 4 years during the course of implementing the 1984 RCRA amendments. It would be irresponsible and incomprehensible to extend tax-exempt status to RCRA-exempt practices or loopholes, while taxing or hindering the very treatment alternatives to land disposal called for by the 1984 RCRA amendments. However, this is precisely what many waste-based proposals do.

The 1984 RCRA amendments already establish not only incentives for proper management but in fact directly proscribes a wide range of land disposal activities. In addition, they seek to eliminate many of the other regulatory loopholes that have allowed the "legal dumping" of hazardous wastes by methods other than land disposal such as the burning of hazardous waste in boilers, furnaces and other unpermitted units, sewer disposal without pretreatment, many bogus "recycling" practices, disposal by evaporation, long-term storage, and the fact that thousands of hazardous materials are not currently listed as hazardous wastes including carbamates and many other pesticides, EDB, many solvents, dyes & pigments, refining wastes and many others.

It must also be appreciated that the 1984 RCRA amendments, as good as they are and as comprehensive as they are and as much as we believe that they will work, we cannot ignore the fact that we are at the beginning of this process not the end. The 1984 RCRA amendments will take over 4 years to implement. Any tax imposed today based on current RCRA standards and wastes will inherit the entire system, loopholes, limitations and all. We are only at the beginning of a long journey toward a protective system of waste management. If we had no RCRA reauthorization and no legislated land disposal restrictions; or if this were 1990, and the loopholes had been closed, the land disposal restrictions were in place and we had a system that could prevent the creation of new "Superfund" sites, then our position might be different. But these many changes in the RCRA amendments will not be implemented overnight. In the meantime we must engage in no action or noble experiment that exempts from taxation and indirectly subsidizes the very loopholes or "legal dumping" practices that RCRA will eliminate.

Beyond the failure of these waste-based proposals to account for the deficiences in the RCRA system there are several other structural and conceptual problems with these approaches:

Most every scheme places primary reliance for revenue generation on a base of activity that is scheduled to shrink due to the RCRA land disposal prohibitions that will be implemented over the next 4 years. In short, the larger the reliance on waste-end revenues and the more it is limited to land disposal alone, the more the system works against itself from both a revenue and environmental standpoint. It will be very difficult to project disposal revenue and activity due to these new restrictions;

As one can tell from the 1984 RCRA amendments, hazardous waste regulation and control will be a most dynamic and evolving activity for the foreseeable future. Any waste-based tax system enacted today will seek to fix for the next 5 years both the levels of taxation and the scope of wastes and practices subject to taxation. With the vast number of changes in new waste listings, delistings, and regulated practices that will be occurring over the next 4 years, and in turn the uncertainty of revenue projection, the Committee and the Congress will be faced with yearly if not monthly requests to add new wastes, delist others, and to change the tax rates, unless it desires to delegate this authority to the EPA;

It is difficult if not impossible to determine what level of taxation will deliver a given level of environmental protection or marketplace incentive, or whether the tax level actually promotes the status quo. If there is one axiom of the hazardous waste business, it is that wastes are like water running downhill, they follow the path of least regulatory control and least cost. Wastes in general can be managed by several methods and therefore can be shifted from one management practice to another depending upon the prevailing regulatory and/or economic incentives. Even if only one method of management is provided with an advantage, such as deep well injection or wastewater treatment, then this will be the method that will be used;

Aside from all the other administrative complexities in a waste-based tax system it must be recognized that 95% of all the hazardous waste generated in the U.S. is managed on the site of the generator. While a manifest system exists under RCRA to track off-site shipments of RCRA wastes, there is no comparable reporting system to track or determine the method or manner of waste management on a generator's site. The EPA annual reporting system required of every generator is so generally incomplete in content that its only appropriate application is that of a door stop. To make any waste-based fee system work it must be accompanied by a formal IRS reporting system of the types and volumes of wastes managed on-site, the methods of management for these wastes and the amount of tax payed. Without an IRS reporting system of this type there will be no meaningful enforcement and the incentive for voluntary compliance with RCRA and the tax system will be nil;

In conclusion, as the purported beneficiaries of waste-based taxation schemes it is our decided preference that no waste-based funding provisions be included in CERCLA. We do not need these kinds of incentives. They do us no favors. We believe that all the necessary and reliable incentives and requirements for proper and permanent management of hazardous wastes are contained in the 1984 RCRA amendments.

If the Committee still believes that after all these disadvantages and risks we are to have a waste-based fee system it should have realistic expectations and policies that do not send perverted and conflicting signals to the regulated community during the time when the RCRA amendments are being implemented.

Rather than risk providing inadequate revenues and perverting national waste management policies through a waste-based tax system, we would recommend that the Committee adopt a broad-based tax such as a tax on the net receipts or gross receipts of all firms with receipts above $50 million. While this approach will affect several of our members, and while people who treat wastes and provide the solutions believe that they should not be subject to any tax, it is also clear that the unpleasant is worse than the uncertain. They would rather be faced with the unpleasant responsibility of paying a net receipts tax, than face the uncertainty and predictable perversity contained in a waste-based tax system.

The balance of my statement this morning is devoted to the following issues:

iii. RCRA exclusions and loopholes
iv. Deep well injection
v. Treatment exemptions
vi. Guidelines for waste-based tax systems
vii. HWTC volume of generation waste-based proposal
viii. Conclusions and recommendations

III. EXCLUDED RCRA WASTES, PRACTICES, AND LOOPHOLES

One of the major failings of the various waste-based proposals is that they tax only those wastes disposed of or managed at RCRA facilities. However, a material that is a RCRA waste when generated does not have to be delivered to or managed at a RCRA treatment, storage & disposal facility. It may be managed in a number of ways that are exempt or excluded from RCRA coverage, most of which are the equivalent of illegal dumping.

Therefore, solely relying on the volume of wastes delivered to or managed at RCRA treatment, storage and disposal facilities (TSDFs) will result in: less than expected revenues, provide a direct incentive to not only continue environmentally unsound practices, but also encourage a shift of wastes to these RCRA-exempt and tax-exempt practices.

The 1984 RCRA amendments will remedy most of these deficiencies. However, this will take at least the next four years to complete. Until that time any tax system that relies on the volumes of RCRA wastes disposed, rather than the volumes of RCRA wastes generated will be shortchanging revenue collection, and encouraging a shift to these environmentally unsound practices. The following sections examine some of the specific RCRA exclusions that have been translated into waste-based perversions of incentives for proper treatment.

A. Sewer disposal and wastewater treatment

(1) "Domestic Sewage" Exclusion—POTW Discharge.—The single largest volume RCRA waste exclusion is due to the "domestic sewage" exemption. Any mixture of RCRA listed or identified wastes that is mixed with domestic sewage and delivered to a publicly owned treatment works (POTW) is exempt from RCRA coverage and instead is subject to the pretreatment standards of the Clean Water Act (CWA). The wastes are considered to be subject to RCRA coverage until they are placed into the sewer line. Under the CWA the Agency is charged with the task of issuing pretreatment standards to eliminate or destroy many of the toxic constituents (many of which are wastes under RCRA) in order to prevent unrestricted disposal of wastes into the public sewer.

This RCRA exclusion would not be so significant if the Agency had promulgated more than quite literally only a handful of pretreatment standards under the CWA. Currently, the only pretreatment standards in effect are for metal finishing and plating operations. The 1984 RCRA amendments mandate a study of the loophole's scope by March 1986, and require RCRA restrictions and/or pretreatment standards by January, 1988 for those RCRA wastes not previously subject to pretreatment standards. While precise quantification of this exclusion is not possible at this time, it can be said with certainty that it is indeed massive.

A 1983 "Chemical Manufacturers Association Hazardous Waste Survey" (CMA Survey) notes that from 93 CMA chemical companies alone (722 plants) over 50 million tons of hazardous waste per year are disposed of into POTWs (public sewer lines). Few POTWs are designed to handle significant industrial discharges, and frequently the POTW will discover such discharges only after the biological treatment system of the facility has been damaged by a large toxic industrial inflow. The damage from the RCRA domestic sewage exclusion, the lack of pretreatment standards for most industrial hazardous wastewater discharges, and the fact that the necessary pretreatment standards are years away are compounded by the fact that much of the hazardous wastewater is held in surface lagoons (most of which do not have liner systems to prevent migration) before it is discharged to the POTW line. Therefore, untreated toxics are not only being discharged to POTWs and in turn surface waters, but are also leaking out of numerous facilities and contaminating groundwater as well.

In addition, an EPA "Small Quantity Generator Survey" (SQG Survey) issued in February, 1985 found that over 10% of such generators use sewers for disposal of their hazardous wastes. The SQG Survey also found that the percentages in the chemical and pesticide sectors were substantially higher. Ten percent of an estimated 1.0 million metric tons of SQG waste per year amounts to 100,000 tons of sewered hazardous waste per year from SQGs alone. There is every reason to believe that the balance of CMA members, other non-CMA chemical firms, and non-chemical firms also place substantial amounts of waste into the sewer disposal.

(2) On-site Wastewater Treatment—NPDES Permits.—Separate and apart from the domestic sewage or POTW exclusion, is the manner in which many generators treat their wastewater on-site in accordance with permits under another provision of the CWA. These generators do not rely on discharges to POTWs, rather they rely on chemical and biological treatment to achieve the surface water discharge limitations specified in their NPDES permits (National Pollution Discharge Elimination System). The CMA Survey shows that the volume of waste treated in tanks and impoundments and discharged to surface waters dwarfs all other categories. In fact, the 235 million tons of waterwater treated by NPDES permits from these 93 CMA companies alone equals EPA's estimate of the total amount of hazardous waste generated by all other facilities in the country.

By itself treatment and discharge in accordance with NPDES is not completely undesirable. In fact, several RCRA wastes are readily amenable to biological degradation. In addition, NPDES permits frequently contain specific limitations on toxic discharges. However, a significant problem occurs in that the 1984 RCRA amendments explictly phaseout and close unlined and leaking surface impoundments including leaking wastewater treatment impoundments within 4 years unless they are dual lined and meet a series of other demonstrations and standards specified in the law. Several studies have shown that the majority of all impoundments including wastewater treatment impoundments are unlined or inadequately lined and are leaking or likely to leak. The CMA Survey is illustrative on this point. Their own survey acknowledges that 39% of their membership's impoundments are unlined. An even larger percentage is likely to have inadequate single liner systems that consist of nothing more than deposited sludge that are also leaking. Moreover, the CMA Survey notes that of the 235 million tons of wastewater discharged under NPDES permits, 135 million tons are so discharged from surface lagoons. Only a part of this volume has been included in EPA's 250 million ton volume estimates.

(3) Summary of POTW Exclusion & NPDES Discharges.—The POTW exclusion is very significant because of the large volumes involved, and the incentive to continue its current and expanded use if such waste disposal is not subject to taxation. This could be remedied by taxing all wastewaters generated and disposed of into a POTW line that was not first treated in accordance with a pretreatment standard under the CWA. This approach would ensure that sewer disposal is not accorded a tax advantage, and would also provide a direct incentive for generators to reduce waste volumes via process changes and to come into compliance with and assist in the issuance of additional pretreatment standards under the CWA. Regarding NPDES discharges the same concerns are present and the same type of remedy could be applied. The NPDES standards are in place, but the vast majority of such treatment prior to discharge occurs in leaking surface lagoons. Inclusion of an unqualified exemption would undermine the RCRA phaseout of these units and accord a tax break to units that are polluting groundwater. NPDES treatment in tanks should be exempt, while treatment in impoundments should be taxed. The Administration's revisions to their waste-based tax proposal places only a $0.25 per wet weight ton on NPDES discharges, and excludes all together POTW discharges. If this isn't an invitation to find your nearest sewer I don't know what is.

B. "Recycling" exclusions

Second only to the domestic sewage exclusion are the collective recycling exclusions. Under the 1980 RCRA regulations, any "beneficial use" of a waste qualified for an exclusion. The extent to which a use is deemed beneficial has been largely left to the user, and as such resulted in the Times Beach road oiling site and others. In the January 4, 1985 Federal Register, EPA promulgated a final rule that expands the universe of activities subject to hazardous waste control with particular emphasis on previously exempt recycling activities. However, the rule still must be implemented through permits, and additional regulations for specific activities. Due to the diverse nature of recycling practices, several additional regulatory packages will be required to distinguish when a material is considered to be a waste, and when it is considered to be a product. Two of these will be examined.

(1) Burning & Blending.—Under present regulation burning hazardous waste for energy or materials recovery is exempt from RCRA controls as a beneficial use. An EPA Acurex study estimated that over 20 million tons of hazardous waste per year are burned in these exempt boilers, kilns, and furnaces. However, burning to destroy wastes in an incinerator is subject to the most stringent and specific standards EPA has issued. The 1984 RCRA amendments eliminate this baseless exemption and directs EPA to promulgate technical standards governing all non-incinerator burning within 2 years. However, the practice can continue during this period and until such time as EPA permits individual facilities. EPA has issued a proposed rule to regulate burning in non-industrial boilers through a fuel specification standard. Technical standards on industrial boilers should be proposed by year's end.

(2) Land Applications.—Many creative uses of hazardous wastes have emerged that involve a claim that the waste is a "product" and are in turn applied to the land as a fill material or a fertilizer. In the January 4 Federal Register "Redefinition of Solid Waste," EPA recognizes many of these practices as a use constituting disposal and states that such uses should be regulated as disposal. However, in the preamble to this final regulation the Agency noted that many of these practices require a separate regulatory package(s) with individual performance standards that will not be promulgated for several years. This includes such egregious activities as the use of lead-containing emission control dust in fertilizer products that are spread on the ground. There is no quantitative estimate of this very diverse and difficult category.

(3) Other "recycling" Practices.—Many other "recycling" practices are currently under scrutiny for inclusion in the scope of hazardous waste coverage, most of which involve wastes that are being incorporated into products such as asphalt plants and other petroleum-based materials.

C. Ocean dumping

The Agency has yet to clarify its policy on ocean disposal of RCRA wastes, including those wastes that are restricted from land disposal under the 1984 amendments. In response to our inquiry on this point, the Agency's response was equivocal leading to speculation that they are considering additional ocean disposal permits. The CMA Survey estimates that their members were ocean disposing of up to 500,000 tons of hazardous waste per year. Given the inescapable fact that wastes flow to the place of least control and least cost, and the fact that ocean disposal is not governed under RCRA this could be a very significant category once the RCRA restrictions begin to take effect.

D. Storage constituting disposal

The EPA's Office of Solid Waste has estimated that the amount of hazardous wastes in storage in underground storage tanks alone is greater than the amount that is landfilled every year, or approximately 15 million tons. Several proposals fail to include long-term storage, beyond 2 years, as disposal for purpose of the tax.

E. Hazardous materials not listed as hazardous wastes

The number of hazardous materials that are listed or identified as hazardous under RCRA covers only a small fraction of those materials that should be subject to RCRA regulation. Numerous state systems are far more inclusive than RCRA. Examples of hazardous materials not covered under RCRA include: EDB, most pesticides including the carbamates (which were the type being manufactured at Bophal), dyes and pigments, many solvents, and the majority of EPA identified carcinogens. Perhaps the most telling indicator of RCRA's inadequacy is the fact that dioxin-containing wastes are not even RCRA hazardous wastes as of this day. Some dioxin waste streams will be listed under RCRA by June 15, 1985, although several others remain to be addressed. Any waste-based tax system enacted this year will in turn reflect and perpetuate these glaring deficiencies for the next 5 years.

IV. DEEP WELL INJECTION

Beyond sewer disposal and impoundment treatment, several of the waste-based tax proposals add deep well injection to their list of "beneficiaries." The Bentsen-Moynihan bill uses the "dry weight ton" basis of measurement, and the Administration bill actually taxes incineration and other forms of permanent treatment at a higher rate than deep well injection. Deep well injection is not treatment, it is long-term underground storage on a grand scale with all its attendant uncertainties. Deep well injection is subject to the same presumptions and restrictions under the 1984 RCRA amendments as all other forms of land disposal. The aforementioned proposals, however, establish a contrary policy. The following examines the reasons why deep well injection must be taxed on a wet weight basis and at the levels of other land disposal facilities.

A. Deep well facility failures

Deep wells must be taxed at the same rate as other forms of land disposal, for failures at these facilities have occurred on a large scale. One of the major reasons for failures of deep well facilities lies not with the facilities themselves, but with the fact that anything and everything is currently allowed to be deep welled and virtually everything is. Recent research has shown that the two most common injected waste categories: organics and corrosives, when injected together will actually enhance migration rather than retention within the injection strata.

While the majority of injected wastes are relatively "dilute" aqueous materials, the persistence and bioaccumulative potential of many injected wastes provides no assurance of permanent protection. Rather, injection of such wastes perpetuates uncertainty regarding future protection. Moreover, very small amounts of contamination, even in the parts per billion range, are sufficient to render an aquifer unfit for human consumption.

EPA has undertaken 9 separate enforcement actions at deep well sites due to demonstrated or potential groundwater contamination. While deep well failures have not been documented with the same frequency as that of other land disposal facilities, when failures occur they do so with unparalleled scope and volume. In examining some of the most significant well failures we find:

Erie, PA: according to a U.S. Geological Survey of this "Superfund" deep well site, the first contamination was detected over 4 miles from the injection well. "The implications of this problem could be enormous. . . The problem demonstrated at this site could occur most anywhere in an area which could encompass Northwestern

Pennsylvania, Northern Ohio and even parts of Canada. People may have had their wells turn bad and not know why." Other gas and brine injection wells in the Allegheny Forest are currently under investigation as the suspected cause of other groundwater contamination cases in the area;

Vickery, Ohio: the largest fine ever levied for improper hazardous waste management ($10 million) was assessed at this Chemical Waste Management Inc. deep well facility, where leakage of over 45 million gallons of hazardous waste went undetected for almost two years during facility operation;

Midland, Michigan: in 1983 the Dow Chemical Company abandoned altogether the use of deep well disposal because it couldn't be sure what would eventually happen to the waste (Fortune, 5/30/83). However, this action occured only after injecting brine and several dioxin-containing wastes (including 2,4,5-T) for many years. An April 11 violation notice from the Michigan DNR cited 13 major spills and breaks, 20 minor leaks, and the failure to report several spills and leaks. Moreover, the combination of brine and waste injection over the years have raised new concerns about the scope of groundwater contamination in the State given that the injection formation extends from Midland to Detroit (Detroit News, 12/21/84);

Rio Bravo Deep Well, Kern Cty, CA: this recently permitted deep well had its permit suspended due to an explosion and release of hazardous wastes from the facility on November 9, 1984. As of this date plans to reopen the facility remain in doubt.

B. Regulatory deficiencies

There are no regulatory restrictions on the types of wastes that can be placed into a deep well. As an editorial from Chemical Week noted as far back as October 14, 1981, "In theory, there is no problem. But in fact there are a lot of unknowns when an uncontrolled mixture of synthetic organic chemicals is exposed to subterranean heat that can reach a couple hundred degrees. . . . The consequences of an error could be horrendous. That is why some companies have on their own decided to restrict what they inject. In some cases, that means further—and perhaps more costly--pretreatment of the wastes. We would like to see the industry take the lead in making such caution a matter of standard practice. Loopholes are fun, but there is more mileage in a demonstrated sensitivity to environmental uncertainties."

Substantive regulation of injection wells currently occurs under the Safe Drinking Water Act (SDWA), not RCRA. Due to RCRA's deference to the SDWA we have the inane and ironic circumstance of imposing less controls on deep wells than any other form or hazardous waste management. Unlike every other land disposal facility owners and operators of deep wells are not required to: demonstrate financial responsibility for third party liability or corrective action; monitor groundwater; or to undertake specific corrective actions in the event of a release. While monitoring of the injection stack is required, such monitoring is frequently unable to detect slow leaks.

The Office of Drinking Water has justified these loopholes on the basis that financial assurances would be too costly, and monitoring would be ineffective because it is difficult to know where to place the monitoring wells due to an inability to predict with certainty the direction, rate and pattern of waste migration within the injection formation.

Moreover, recently issued deep well injection standards, while imposing improved technical standards on deep wells, do nothing to restrict the wastes that are so disposed. The deep well regulations of 1985 are pursuing the same policy and making the same mistake of landfill regulations of 1976. That is, simply relying on physical barriers as the sole basis of protection, while ignoring the fact that certain wastes cannot be safely injected into or predictably contained within the injection formation no matter what type of hardware is required. We also used to think that if you simply require more liners, landfills could take everything without restriction. We have learned the hard way that there is no such thing as a state-of-the-art landfill for all wastes.

Several states have outlawed deep well injection, or declared moratoriums on future injection.

C. Post-closure liability trust fund

Under the current structure of the post-closure liability trust fund (PCLTF) deep welled wastes are not assessed the $2.13 per dry weight ton to cover liability subsequent to closure. It is the expectation of many deep well operators, however, their facilities would be eligible for such liability transfer to the federal government 5 years after closure of the facility. Even if deep welled wastes were taxed for this purpose there is no way that the current level of taxation on a dry weight basis would even begin to cover the cost of cleanup.

PCLTF considerations withstanding, unlike every other type of hazardous waste facility deep wells are not required to conduct groundwater monitoring or demonstrate financial responsibility for third party liability or corrective action. Due to the relatively small level of capital required to install and operate a deep well, and given the absence of any financial assurance requirements it is highly likely that problem deep well facilities will become the burden of "Superfund."

D. "Dilute wastes" & wastewaters

Reference is frequently made to the fact that certain wastes, particularly those that are deep welled, are very dilute materials and therefore should not be subject to waste-based taxes or taxed on a dry weight basis. The extent to which a waste is "dilute" is very much in the eyes of the beholder or generator as the case may be, and is specious distinction that begs the larger question of what types of constituents are present.

Most wastes are hazardous at low concentrations. In fact many common household pesticides are 99% inert ingredients, and medicinal iodine solutions are 98% non-toxic ingredients, yet all of these products are fatal or harmful if misused. In a similar vein, the term "wastewater" was used in a context which implies that merely because the material is a watewater it is somehow innocuous. A survey of the 88 "F" and "K" series listed wastes reveals that 27 of them are indeed wastewater streams from various industrial processes. Neither the "dilute" or "wastewaters" labels in and of themselves provides any reassurance and first require a definition of the constituents in the wastes.

E. Wet weight ton

To fully appreciate the total ruse being perpetrated by this approach and the quantitative discount factor accorded to even very toxic waste streams under the dry weight ton scheme an example is necessary. A standard 5,000 gallon tanker truck that delivers a full load of highly corrosive hydrochloric acid (pH 1) to a facility for disposal at the rate of $5/wet weight ton would pay a tax of $125 (5,000 gal. x 10 lbs/gal. 2,000 lbs/ton x $5 per ton). On a dry weight basis the tax would be approximately $0.50 if the rate were $5 per dry ton, and still only $5.00 for the entire tanker truck load if the tax rate were $50.00 per dry ton (calculation based on 100,000 grams of HCL per tanker, which equals 220 lbs. or .11 ton of dry HCL x $5.00 or $50.00 per dry ton.

To equalize a $5 wet weight tax with dry weight one would need to impose a dry weight tax of approximately $5000 per ton for most wastes. I have provided to the Committee two different methods that could be used for calculating dry weight ton. It should be noted that the above calculations of dry weight are very generous because every dry weight analytical procedure involves the heat drying of samples that result in evaporative emissions from the sample and the loss of some "dry weight" material. Such evaporative losses would be especially high when calculating dry weight for a volatile organic.

Beyond these considerations every material has a different dry weight, making the calculation of dry weight for mixed waste streams virtually impossible. In addition, if dry weight is used for deep welled wastes why shouldn't it also apply or exclusively apply to treatment processes that completely destroy or reclaim liquid wastes, rather than a process that merely injects them into underground formations with unknown consequences?

V. TREATMENT EXEMPTIONS

One of the other major failings of many proposals is their failure to exempt permitted treatment methods from the tax. Many of the proposals under consideration equate treatment such as incineration with injection. At the same time many of them fail to tax the exemptions and loopholes that compete with proper treatment methods. This is the worst of all possible worlds. Proper treatment of hazardous wastes is its own tax. Moreover, it always costs more to do something than to do nothing. The axioms of no free lunch and getting what you pay for fully apply to hazardous waste management. While not every treatment method is more costly than land disposal, many of them are due to the high cost of degrading rather than merely disposing of the materials.

In addition, many state waste-based fee systems are already taxing treatment. New York for example is attempting to tax commercial incineration at $9.00 per ton, with land disposal at $27.00. This type of structure does far more harm to the competitive posture of incineration than land disposal. Even a more benign tax structure such as a flat tax, which would still have a larger marginal affect on land disposal due to its lower relative cost, still raises the total cost of treatment at a time when treatment operators are beginning to lower their cost due to greater marketplace stability and the request for long-term contracts.

The most important point to keep in mind is that, unrestrained by regulation, generators make their waste management decisions based on total cost, not marginal cost. The bottom line is still the bottom line. It is the total cost of managing a waste by a given method that people look for. This view shares such widespread recognition that the spokesperson for the nation's largest commercial land disposal firm acknowledges that cost will be the determining factor in a generator's waste management decisions (New York Times, 6/10/83). The treatment costs of the future will rarely if ever approximate the land disposal costs of today. For that matter the land disposal costs of the future will not be anything like the land disposal costs of today. Therefore, anything that adds even more to a generator's bottom line for treatment will only exacerbate an already uncomfortable situation, enhance the incentive to continue cheaper land disposal, and introduce additional uncertainty into the future planning and expansion of treatment facilities.

VI. GUIDELINES FOR WASTE-BASED FEE SYSTEMS

For any waste-based fee system to be successful the Treatment Council believes it must satisfy the following guidelines:

Modest Supplement: Waste-based fee systems can only be expected to modestly supplement the fees collected from general revenues, and petroleum and feedstock taxes. State-level experience has demonstrated that the greater the reliance on waste-based fees the less reliable the total revenues for the program. This is particulary true where sole reliance for revenues rests with the shrinking base of land disposal. A yearly waste-based revenue of approximately $300 million is a realistic upper limit of revenue expectation that does not engender false hopes or specious claims of revenue potential and also reflects the likelihood of underreported waste volumes particularly for on-site management of hazardous wastes where there is no manifest system to verify waste volumes, shipments or transactions. It should be noted that 95% of all wastes generated in the U.S. are managed on the same site;

Primary Purpose is Revenue Collection: While much is made of the incentives for proper treatment that a waste-based fee system provides, it must be recognized that such systems are first and foremost revenue raising measures. All the incentives for proper treatment and management are already provided in the 1984 RCRA amendments. A system that can raise supplemental revenue, while doing no harm to the RCRA policies by commission or omission is the best that can be expected;

Consistency with 1984 RCRA Amendments: Our greatest concern with waste-based systems in general is that while well-intentioned, they will undermine the land disposal prohibitions and the closing of regulatory loopholes established under the 1984 RCRA amendments (see attachment). In fact, these concerns are borne out by an examination of the House Commerce Committee bill of last year and this year's Administration bill. While uncontrolled burning of hazardous waste in boilers and the management of hazardous wastes in leaking surface lagoons are both scheduled for prohibition under the 1984 RCRA amendments, they were also totally exempted from taxation under the 1984 House Commerce CERCLA bill. Similarly, the current Administration bill fails to tax these and other "loopholes" and provides no exemption for treated wastes;

The Proper Treatment of Hazardous Waste is Its Own Tax: The proper treatment, destruction, and recycling of hazardous wastes in many cases costs more than land disposal. Doing something and doing it right invariably costs more than placing material in the ground and doing nothing. Taxing treatment methods only further penalizes those that are already paying more for properly managing their wastes;

Tax Base Must Include All Undesirable Practices Identified by the 1984 RCRA Amendments: To avoid providing indirect subsidies to those practices that have been identified for phaseout under the 1984 RCRA Amendments, they too must be subject to taxation until such time as regulations are issued and the prohibitions take effect. The failure to tax these loopholes (burning for energy and materials recovery, bogus "recycling", sewer disposal, ocean dumping), while taxing permitted treatment methods totally perverts our national hazardous waste policy in fact encourages generators to use these undesirable practices for as long as they can and to the greatest extent they can. Unless the tax scheme is properly structured, ironically it will cause a shift of wastes to these very methods that have been designated for phaseout and which themselves have been the cause of many "Superfund" sites. If there is one axiom in the hazardous waste management field it is that absent any regulatory requirement, wastes will flow to the management practice of least cost and least control. The burgeoning list of "Superfund" sites provides somber confirmation of this fact. In addition, the existence of these loopholes account for the fact that the volumes of hazardous waste generated is far greater than the volumes of wastes that are ultimately delivered to and managed at RCRA treatment storage and disposal facilities (TSDFs). A RCRA waste can quickly escape RCRA tracking and control via one of these loopholes;

Broadened Base of Fee Payments and Collection: Just as 50 years of improper management are not going to be remedied in 5 years of CERCLA cleanup, so to the scope of tax payers and collection points cannot be limited RCRA treatment storage and disposal facilities (TSDFs). The base of collection points must be broadened to include generators of RCRA wastes in order to catch those wastes that are not managed at RCRA TSDFs. An increase in the number of taxpayers has never been a sole basis for rejecting a revision to the tax code. Similarly, the fact that the number of collection points will increase to approximately 50,000 (presuming generators below 1,000 kg/mo are excluded) should not provide an administrative excuse for properly structuring the collecting mechanism;

No Need For Punitive Levels of Taxation: A taxation level of $2–5/ton provides more than enough flexibility to raise the target level of revenue, and is more likely to be collected than a taxation level of $25–50/ton. The 1984 RCRA amendments already impose substantial capital costs on future land disposal that have narrowed the disparity between treatment and disposal costs, generally. In addition, many state CERCLA revenue programs already depend upon significant land disposal taxes that may be jeopardized by additional Federal taxes particularly when the level of taxation is punitive;

Wet Weight Ton: The unit of measure for assessing taxes must be the wet weight ton. The use of dry weight ton is a specious basis for taxation and creates an artificial distinction with no environmental significance or basis. When a Superfund site is cleaned up all materials; liquids, sludges and soils must be cleaned up, not only the dry weight portion. Moreover, the basis of taxation must be consistent with the medium and manner in which contamination has occurred. If all wastes were dry when disposed, and without a liquid medium for contamination to migrate there would be few Superfund sites. In addition, there is no universally accepted method for determining dry weight ton and the cost of determining dry weight ton for a given waste will invariably exceed the tax itself;

Deep Wells Must be Taxed at the Levels of Other Land Disposal Methods: Under the 1984 RCRA amendments deep well injection is subject to the same substantive prohibitions and restrictions as other forms of land disposal. While we currently believe that the frequency of deep well failure is lower than that of other land disposal methods, the uncertainty associated with deep well injection and the enormous zones of contamination that have been caused by well failures dictate that no special consideration be accorded to deep well injection.

VII. TREATMENT COUNCIL VOLUME OF GENERATION PROPOSAL

The membership of the Hazardous Waste Treatment Council believe that if a waste-based tax is included in should tax the volumes of wastes generated irrespective of where the generation occurs, on-site or off-site at a commercial facility, to provide the broadest and most reliable basis for revenue collection. The provisions of a generation volume tax would include:

A tax of $2–5 per wet weight ton;

Taxing hazardous wastes on the volumes generated and limiting the exemptions to those wastes that are managed at a treatment facility permitted under RCRA, the Ocean Disposal Act, or the pretreatment provisions of the Clean Water Act, or which are managed in accordance with a RCRA treatment process that renders the material non-hazardous. Reclamation that returns a spent product to its original product use such as solvent or lubricant reclamation should also qualify for an exemption;

As such a tax would be imposed on all wastes generated and that are land disposed as a hazardous waste, all management of wastes (including treatment) in leaking and unlined surface lagoons unless and until they meet the criteria for exemptions specified in the 1984 RCRA amendments, all burning of hazardous wastes unless and until permitted, certain reclamation practices such as dust suppression, sewer disposal of material that has not been pretreated in accordance with CWA standards for those waste categories, and the direct ocean disposal of any RCRA hazardous waste;

A delayed effective date of 2-3 years from the date of enactment would be included to allow sufficient time for the Agency to finalize regulations governing the phaseout of various recycling practices such as unpermitted burning of hazardous wastes and various land applications;

The burden would be placed on the generator, much in the manner of a taxpayer, to account for his waste generation, tax payment, and verify that wastes for which taxes were not payed had been managed in accordance with the specified treatment standards and at permitted treatment facilities;

An IRS reporting requirement for on-site managers of hazardous wastes to complement the RCRA manifest requirement for off-site management of hazardous wastes and to assist the IRS in verifying the volumes and types of waste generated for the purpose of assessing the tax; and

Double taxation of wastes taken off-site could be prevented by collecting a tax at commercial facilities only on those RCRA hazardous residues generated during the treatment process. All other taxes would be collected from the on-site waste generator.

VIII. CONCLUSIONS AND RECOMMENDATIONS

Due to the inherent and predictable perversion of the requirements, restrictions and national policy of the 1984 RCRA amendments the Council opposes the imposition of any waste-based tax provisions in the CERCLA reauthorization. In the event that the Committee still desires to pursue this approach, the Treatment Council has provided the principles and outline of a waste-based system that contains real, not illusory or imagined incentives for proper treatment consistent with the 1984 RCRA amendments that would tax the volume of waste generation; that is impose the tax where 95% of the wastes are generated and managed—on the site of generation. This approach would also prevent the problem of a RCRA waste avoiding the tax by being managed via a RCRA exclusion—an unavoidable shortcoming of the approaches that would tax waste disposal activities rather than waste generation.

The Treatment Council recommends that the CERCLA funding package consist of the following:

A fund level of $7.5 billion over 5 years;

Maintain general revenue at its current rate of 12.5% of the total fund with a possibility of raising it to 15-18% in light of the broad and diverse response actions that are being conducted under CERCLA, many of which bear no relation to the chemical feedstocks and petroleum that are being taxed;

Increase the feedstock and petroleum tax by up to a factor of 2, and include the various inorganic pollutants and contaminants that CERCLA has responded to, but which are not currently taxed (HWTC study on this matter has been provided to the Committee); and

Make up the balance of necessary revenue with a net receipts tax on any corporation which has gross receipts in excess of $50 million for any taxable year. This too spreads the burden for responding to sites that bear no relation to chemical and petroleum feedstocks, while maintaining a low level of taxation relative to firm size and capability much in the same vein of the current feedstock tax.

The Treatment Council appreciates the opportunity to present its views and recommendations this morning and looks forward to working with the Committee during its development of a CERCLA funding provision.

HAZARDOUS WASTE AMENDMENTS OF 1984 (PL 98-616)

Establishes an explicit national policy in favor of alternatives and identifies land disposal as the method of last resort;

Specifically lists those wastes that are to be scheduled for prohibitions such as solvents, dioxins, metal-bearing wastes, corrosives and halogenated organics;

Establishes a direct presumption against land disposal of all hazardous waste;

Supports the presumption with self-implementing sanctions in the event the Agency fails to act by specified dates;

Requires that all new land disposal facilities contain dual liners to prevent migration;

Requires the retrofit of all leaking and unlined surface impoundments;

Closes the loopholes for uncontrolled burning and blending, small generators, recycling practices generally dust suppressants, and sewer disposal;

Restricts the use of absorbents and the land disposal of containerized and bulk liquid hazardous waste;

Provides cleanup authority for continuing releases through the permitting process, and for direct corrective action through interim status administrative orders;

Directs the Agency to generically list and bring additional wastes under RCRA control, and strengthen the delisting process;

Provides for broader enforcement authorities, increased criminal penalties and direct citizen enforcement of the law; and

Establishes a nationwide program for the regulation of new and existing underground storage tanks and the phase out of bare steel tanks.

Mr. ANTHONY. Now, we will hear from Dr. Nordhaus, a professor at Yale University.

STATEMENT OF WILLIAM D. NORDHAUS, PH.D., PROFESSOR OF ECONOMICS, YALE UNIVERSITY

Mr. NORDHAUS. Thank you very much, Mr. Chairman. I would like to submit my prepared testimony for the record and summarize it briefly.

My name is William Nordhaus. For professional identification purposes, I am professor of economics at Yale University. In addition, in the 1970's I served as a member of the President's Council of Economic Advisers.

My testimony is based on a thorough study that I completed last year on the impact of Superfund feedstock taxes and on the advantages and disadvantages of various financing alternatives. I have attached the executive summary of that report to my testimony and I would like to make this study available to the committee for its deliberation. I would like to summarize the main points.

First, is it clear that the CERCLA legislation that was passed in 1980 is underfunding the activities that are needed. The recent OTA study estimated cleanup costs in the $50 to $100 billion range in the decades to come. This suggests that Congress must take great care to design a revenue source that will do the job in an efficient way.

In our attempt to answer the question of how best to finance Superfund, we studied the major revenue alternatives and analyzed eight tax proposals in detail. The list of taxes is on pages 2 and 3 of my prepared testimony and included three broad-based taxes, two intermediate product taxes, and three waste-end taxes. Indeed, I would say, that virtually all of the revenue alternatives that are before this committee were analyzed in some detail in our report.

What I would like to do is to mention briefly, three of these taxes—the feedstock tax, the broad-based tax, and the waste-end tax.

Our previous study examined in detail current and proposed CERCLA chemical feedstock taxes. We determined that these taxes were flawed as a source of Superfund financing for several reasons. The most important, perhaps, is that they distort international trade. We determined and pointed out that it is rather ironic that feedstock taxes actually serve as subsidies on imports into this country, and as taxes on U.S. exports of feedstocks and their derivatives—hardly a welcome policy these days of a battered manufacturing sector.

Second, they are not effective hazard taxes. They indirectly tax many nonhazardous products, such as aspirin or plastic cups, as well as hazardous substances, such as, carbolic acid or acrylonitrite. Third, as currently structured, they are inequitable and, as

EPA shows, they do not tax hazardous chemicals in a balanced fashion.

Because of their poor design, we recommended that they be replaced with more efficient taxes.

Our study recommended that Congress rely chiefly on a broad-based tax for the bulk of Superfund financing. Such an approach would meet a number of objectives. It would provide the necessary revenue streams at very low tax rates; it would be very predictable, and it would be simple to collect and to pay. Further, it would be equitable because past benefits derived from products that cause the waste problems are dispersed widely through the Nation, and a broad-based tax would produce minimal economic distortions.

Specifically, I recommend a tax on domestic corporate net receipts. These are a corporation's domestic gross sales minus the cost of goods sold. If such a tax were levied only on a company whose net receipts exceed some cutoff, such as $5 million, the number of taxed firms would be small. In addition, if say, $1 billion a year were to be raised, you could accomplish this with very low tax rates, in the order of one-tenth of 1 percent on domestic net receipts. The essential point is that the very broad tax base allows a very low tax rate.

Finally, our analysis last year that suggested the waste-end tax, specifically, a hazardous waste disposal tax, would be a useful complement to a broad based tax in helping to finance Superfund. I would particularly point to the Schneider-Wyden proposal and the comments that were appended to those as particularly apt in this respect.

To summarize, the purpose of cleaning up the thousands of dangerous dump sites dotting our country would be best served by dumping the tax on feedstocks; second, we should rely principally on a broad-based tax, such as the net-receipts tax, for funding cleanups while supplementing this with a waste-end tax. This approach would induce very low levels of economic inefficiency, would distort international trade very little, and in my view would spread the burden of cleanup costs widely and fairly across our community.

Thank you, Mr. Chairman.

[The prepared statement follows:]

STATEMENT OF WILLIAM D. NORDHAUS, PH.D., PROFESSOR OF ECONOMICS, YALE UNIVERSITY

SUMMARY

Over the last two years, I have been engaged in study of alternative revenue sources for Superfund. The basis of my conclusions is contained in a study, Financing Superfund (Management Analysis Center, Inc., Cambridge, 1984).

The major conclusions of that study, supplemented by a review of recent developments, are the following:

1. Financing Superfund will require considerably greater federal revenues than had been anticipated in 1980.

2. The original funding mechanism, taxes on petrochemical feedstocks, is poorly designed. These intermediate product taxes add significant distortions to international trade by penalizing our exports and subsidizing imports. The feedstock taxes should be repealed.

3. A tax which would best meet Congressional objectives would be an earmarked broad-based tax, such as a tax on corporate net receipts. This tax would be extremely easy to administer; would raise ample revenues in a secure way; and would

impose negligible distortions on domestic economic efficiency or on international trade.

4. Congress might also use a waste disposal tax, such as is discussed in Financing Superfund. This tax would supplement revenues while providing disposers with the proper incentives for minimizing generation of hazardous wastes and for disposing of them in environmentally acceptable ways.

STATEMENT

My name is William D. Nordhaus. My professional background, for identification purposes, is as follows: I am a professor of economics at Yale University, where I hold the John Musser Chair in Economics. From 1977 to 1979 I was a member of the President's Council of Economic Advisers. In that capacity I supervised the Council's activities in energy, environmental affairs, and regulation. I am the author of numerous books and articles on economics, energy, regulation, and public finance.

My testimony is based on a thorough study that I completed last year on the impacts of Superfund (CERCLA) feedstock taxes and on the advantages and disadvantages of various financing alternatives.[1] I have attached the Executive Summary of that report so that you can familiarize yourselves with the details of our study. I appear today to review the earlier study as well as to reassess earlier views in light of recent data and of more recent proposals for Superfund financing. The original study was performed in collaboration with the staff of Management Analysis Center, and was supported by the Atlantic Richfield Company. All conclusions are mine alone.

BACKGROUND ON FINANCING SUPERFUND

It would appear that, since the CERCLA legislation was passed in 1980, an even broader national consensus has emerged about the desirability of cleaning up hazardous waste dumpsites. As a nation, we have also discovered since 1980 that the magnitude and cost of alleviating this problem are much greater than had previously been thought. The Environmental Protection Agency's (EPA) recent Report to Congress estimates that 1,500 to 2,500 sites will require eventual Superfund cleanup at a cost of between eight and twenty-three billion dollars.[2] The Federal Appeals court ruling that allows EPA to add mining and fly ash disposal sites to the National Priority List (NPL) could increase the financing burden further. A recent estimate by the Office of Technology Assessment (OTA) puts the number of sites at 10,000 and the financing burden at $50 to $100 billion.[3] Which of the many conflicting estimates of cost will ultimately be proved correct is uncertain, although, historically, few problems of this nature have turned out to be less costly than anticipated. It is certain, however, that the amount of money necessary to clean up Superfund sites will be very large and that this activity will continue over an extended period of time (about 15 years using EPA estimates, perhaps 50 years using OTA estimates). The increased revenue requirement emphasizes the importance of exercising care in choosing the best means to finance Superfund cleanups.

In an attempt to answer the question of how best to finance Superfund, our previous study examined all the major revenue alternatives and analyzed eight tax proposals in some detail. These taxes included:

Three broad-based taxes:
Corporation income tax surcharge
Corporate receipts tax
Personal income tax (general revenues)
Two intermediate-product taxes:
Energy taxes, such as a tax on crude oil, natural gas, and coal
Feedstock taxes such as in CERCLA
Three waste-end taxes:
Hazardous substance production tax
Hazardous waste generation tax
Hazardous waste disposal tax

We examined each of these eight alternatives in light of well-established public finance criteria and recommended those taxes that best satisfied these criteria. The public finance criteria we used in judging our tax alternatives were: revenue adequacy; administrative simplicity; equity; and economic efficiency.

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[1] Dr. William D. Nordhaus and Management Analysis Center, Inc., *Financing Superfund: An Analysis of CERCLA Taxes and Alternative Revenue Approaches*, June 1984.

[2] U.S. EPA, Office of Solid Waste and Emergency Response, *Extent of the Hazardous Summary, Release Problem and Future Funding Needs; CERCLA Section 301(a)(1)(C) Study*, December 1984, p. 4–10.

[3] U.S. Congress, Office of Technology Assessment, *Superfund Strategy:* March 1985, p. 8.

Let me briefly address the last two criteria, equity and economic efficiency, because they are somewhat more technical than the other criteria.

Equity, or fairness, is an elusive characteristic. In the case of hazardous wastes, Congress has determined that, when the parties legally responsible for wastes can be found, they shall be held liable for cleanup. When responsibility cannot be determined, it is usual to turn to other parties who benefited from past waste disposal practices. In fact, many groups have benefited: producers once enjoyed lower costs; disposers of hazardous waste faced lower standards and, hence, lower costs for disposal; consumers paid lower product prices; and individuals who live in the vicinity of hazardous waste sites benefit from cleanup activities. Clearly, the benefits from products whose manufacture produced hazardous wastes are widely dispersed. To properly apportion cleanup cost to all groups, everyone who has ever used a styrofoam cup, bought pantyhose, taken aspirin, or wrapped a sandwich in plastic wrap would have to be taxed.

Economic efficiency, as applied to these taxes, entails two goals: (a) providing incentives for the appropriate disposal of wastes, and (b) raising revenues in a way that minimizes economic distortions.

RECOMMENDATIONS AND COMPARISONS TO RECENT PROPOSALS

Feedstock taxes

Our previous study examined in detail current and proposed CERCLA chemical feedstock taxes. We determined that these taxes are flawed as a source for Superfund financing for several reasons:

They serve as subsidies on imports of petrochemical derivatives (i.e., downstream chemicals produced from the taxed feedstocks) and as a tax on U.S. exports of the feedstocks and their derivatives.

They indirectly tax many nonhazardous products, such as aspirin or plastic cups, as well as hazardous substances, such as carbolic acid. Consequently, they provide no special incentives either to reduce the generation of hazardous materials or to dispose of them properly.

As currently structured, according to the EPA Report to Congress, the CERCLA feedstock taxes do not even tax the producers of hazardous feedstocks equitably.[4]

In order to analyze how CERCLA feedstock taxes affect U.S. imports and exports of both taxed feedstock chemicals and their principal derivatives, we developed a petrochemical trade model of worldwide production and trade in selected chemicals. We estimate that, at current tax rates, CERCLA's feedstock taxes have a minor impact on U.S. imports and exports of petrochemicals. However, when we calculated the trade impacts for two sets of primary and derivative petrochemicals (propylene/polypropylene and benzene/styrene)—using tax rates that were approximately three, five, and ten times higher than the rates now in effect—the results showed significant trade impacts would quickly arise.

To be specific, we found that a five-fold increase in taxes on propylene and benzene, from $4.87 per ton to $24 per ton, would cause polypropylene and styrene exports to fall by 13% and 20%, respectively. Imports of each would rise by 900% and 600%, respectively. These represent production losses of 5% for propylene and 3% for benzene; but the revenue loss to the industry could total $390 million. We believe, based on a review of costs and markets, that similar trade impacts would occur for other petrochemicals when faced with tax increases of this proportion. While no one has proposed legislation that would raise the feedstock taxes by exactly five times, Congressman Sikorski's bill (H.R. 2022) would raise the average (unweighted) feedstock tax by a factor of four (423%) in 1986 and a factor of six (635%) by 1990.

Our study explicitly modeled only short term changes in trade flows, along with the resulting losses of domestic production, jobs, and profits. There will, in addition, be long term effects as plant replacement and technological innovation make new petrochemical capacity economically attractive; in such a situation, higher CERCLA taxes could well tip the decision to build new capacity outside our borders.

Legislation designed to mitigate the trade impacts of feedstock taxes, such as that proposed by Congressman Moore (H.R. 1775), by taxing imports of downstream chemicals derived from the feedstocks and excluding from taxation exports of feedstocks, would partially alleviate the trade impacts. However, the administrative cost of defining and then taxing imports of "any substance which is directly and substantially manufactured or produced from raw materials or feedstocks consisting of one or more taxable chemicals" would be Herculean, especially since the tax will be based on the amount of the original feedstock incorporated into the imported product. We believe that an import tax of this nature is not practical considering the relatively small amounts of revenues that would be collected and the thousands of products containing feedstocks in international commerce.

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[4] U.S. EPA, Office of Solid Waste and Emergency Response, *The Feasibility and Desirability of Alternative Tax Systems for Superfund; CERCLA Section 301(a)(1)(G) Study,* December 1984, p. 5–4 ff.

H.R. 1775 does exempt exports of feedstocks from taxation, but there is no credit for feedstock taxes incorporated in the price of exported downstream products, as would be required to maintain the trade neutrality of the feedstock taxes. Presumably this was not included in the proposal because of the administrative burden it would cause. These inconsistencies point to the difficulties of designing efficient intermediate product taxes; indeed, it is exactly these difficulties which led us to recommend broad-based taxes as the major revenue source for Superfund.

As EPA's Report to Congress points out regarding the trade issue, worldwide trade in feedstocks and derivatives is getting increasingly competitive, and new low-cost producers are starting operations in places like Saudi Arabia, Mexico, Canada.[5] Recently, the European Economic Community (EEC) felt impelled by these events to impose a 13.5% tariff on Saudi methanol imports.[6] While Saudi production still appears destined for Europe and Japan, trade barriers like these can only help to direct additional flows of materials to the U.S. Ironical then, the Europeans are encouraging domestic production of petrochemicals by tariff protection at just a time when Congress is considering discouraging American production of petrochemicals through an increase in CERCLA feedstock taxes.

Some might claim that CERCLA feedstock taxes are effective as an externality tax, by which I mean a tax that relates to the hazard posed by the chemical. If they operated properly in this regard, feedstock taxes would reduce generation of the hazardous materials, leave non-hazardous materials untaxed, and thereby internalize the costs that the hazardous materials impose on society. With a separate economic model we examined the incidence of CERCLA taxes in the production of petrochemical products. We analyzed the effects of a tax levied on the upstream feedstock, propylene, compared to a tax that is levied on a downstream hazardous product. The results show that feedstock taxes are too indiscriminate to be effective externality taxes. The burden of the tax on feedstocks falls on derivatives that may be nonhazardous, such as aspirin, as we as those that are hazardous, such as carbolic acid. Hence, feedstock taxes are not especially effective in reducing the generation of hazardous materials by raising their costs relative to nonhazardous materials.

The current CERCLA feedstock taxes do not tax chemical producers in an equitable manner. According to EPA's Report to Congress, of the 43 feedstocks that are currently taxed, only 33 have contributed to the wastes found at the NP sites. On the other hand, wastes associated with 15 additional untaxed feedstocks have been found at NPL sites.[7] Moreover, the relative feedstock tax burden is not in proportion with wastes found at the dumpsites. Organic chemicals bear 66% of the tax burden, but on a frequency basis are responsible for only 38% of the problem at hazard ranked sites. Inorganic chemicals bear 18% of the tax burden but cause 59% of the problem (on a frequency basis at hazard ranked sites).[8]

Broad-based taxes

Our study recommended that Congress relies chiefly on a broad-based tax—a tax on domestic corporate net receipts—for the bulk of Superfund financing. Information that has come to my attention since our study was completed has reinforced this view. If anything, the increasing sizes proposed for the Superfund make it even more important to base Superfund financing on an equitable and non-distorting tax. I recommend a broad-based tax for the major share of financing cleanup because broad-based taxes best meet the public finance criteria that I set out earlier. Most broad-based taxes would:

provide the necessary revenue streams at very low tax rates;

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[5] U.S. EPA, Office of Solid Waste and Emergency Response, *Impact of CERCLA Taxes on the U.S. Balance of Trade; CERCLA Section 301(a)(1)(F) Study*, December 1984, Chapter 3.

[6] Wharton Economics, *Wharton Economic New Perspectives*, January 14, 1985 and The Economist, March 9, 1985.

[7] U.S. EPA, Office of Solid Waste and Emergency Response, *The Feasibility and Desirability of Alternative Tax Systems for Superfund; CERCLA Section 301(a)(1)(G) Study*, December 1984, p. 5–4.

[8] Ibid., p. 5–5.

be very predictable because they are based on overall, economic activity as opposed to feedstock taxes that are based on a much narrower (and hence less predictable) set of economic activities;

be simple to collect and pay if they are levied on quantities that are already reported to the IRS;

be equitable, since past benefits derived from products that caused the waste problem (and benefits from current cleanups) are dispersed very widely throughout the nation; and

produce minimal economic distortions, because with a broad tax base tax rates can be very low.

Specifically, I recommend a tax on domestic corporate net receipts; these are a corporation's domestic gross receipts minus cost of goods sold. If this tax were levied only on companies whose net receipts exceeded some cutoff such as $5 million, the number of taxed firms would be small, somewhere between 32,000 and 46,000 out of a total of 3.5 million companies filing Form 1120. Yet, in 1980 these firms generated approximately 64% of all net receipts, slightly more than $1 trillion.[9] Our previous report shows that a tax rate of 0.09% on domestic net receipts will yield approximately one billion dollars in annual revenues in 1985 The very broad tax base allows a very low tax rate. This tax would be extraordinarily simple for the Internal Revenue Service (IRS) to administer and for taxpayers to pay because it is based on currently reported quantities and curren tax forms. This is an important consideration in a time when the IRS has been reported to have serious problems in processing tax returns.

While excluding smaller firms, those with less than $5 million in net receipts from paying the tax eases the administrative burden a great deal, it could mean that some firms associated with hazardous waste problems do not pay any broad-based tax. We feel that this tradeoff between equity and ease of administration is acceptable. Another criticism of the net receipts approach is that the accounting base for cost of goods sold varies across companies and industries. While such variations undoubtedly exist, differences in the tax treatment of similarly situated companies in the same industry should be very minor.

To summarize on the issue of broad-based taxes, I feel that the net receipts tax is the best choice because it is the simplest to administer and pay, poses few distortions, and includes all industries which have clearly benefited from past hazardous waste practices. At the same time, any reasonably structured broadly-based tax would be preferable to expansion of the CERCLA feedstock taxes.

Waste-End Taxes

Finally, our analysis suggests that a waste-end tax, specifically a hazardous waste disposal tax, would be a useful complement to the broad-based tax in helping to finance Superfund. This conclusion is based on the following considerations. hazardous waste disposal tax could:

provide incentives, if the tax rates were carefully structured, for companies (i) to reduce the amount of hazardous wastes they produce, and (ii) to undertake more desirable disposal and treatment methods;

internalize some of the associated social costs of hazardous wastes; and

supplement the net receipts tax as a means of raising substantial revenue.

The principles underlying our waste-end tax proposal have been strongly endorsed by the heads of government at the recent economic summit in Europe. In their declaration at the Bonn summit the heads of government stated:

"We shall harness both the mechanisms of government vigilance and the disciplines of the market to solve environmental problems. We shall develop and apply the 'polluter pays' principle more widely."—Joint Declaration of the Seven Summit Nations at Bonn, West Germany, May 4, 1985, paragraph 13.

Using the public finance criteria set forth earlier, waste-end taxes would provide an adequate source of revenues. Approximately twenty states now use some form of waste-end tax. After an initial shakedown period, these taxes appear to be working more than adequately. Waste-end taxes would be administratively straightforward to assess with only slight changes in current reporting requirements. Waste-end taxes would also satisfy the conditions of equity and economic efficiency.

Many of the current proposals are similar to the waste-end tax we designed last year, though with a few significant differences. The waste-end tax I recommended would be levied on the disposal of hazardous wastes as defined in th RCRA regulations. The tax would be incurred at the time when hazardous waste is disposed of onsite, stored onsite for more than a year, or received at an offsit facility for either storage or disposal. The exact structure of the tax is discussed in some detail in our previous report.

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[9] Dr. William D. Nordhaus and Management Analysis Center, Inc., *Financing Superfund: An Analysis of CERCLA Taxes and Alternative Revenue Approaches,* June 1984, p. 99.

Our proposal may represent an improvement over other plans in some respects. For example, in our proposal tax rates vary by the disposal method, as they do in other proposals, but we would in addition tax more hazardous material at higher rates. Other proposals do not attempt to match the tax rate with the degree of potential harm. Their taxes are set at equal rates per ton even though different substances may pose very different degrees of hazard and potential soc costs. Tax rates on PCBs and sludges should no more be the same than should the prices of diamonds and watermelons. This is an important flaw in many of the proposals.

Other proposals do not tax long-term storage of hazardous annually. We believe that annually taxing materials that are stored for long periods will encourage disposers to properly treat or dispose of their wastes in a much more timely (and safe) fashion than has been the case for many in the past. In addition some proposals, specifically the Administration's, would tax wastes that are treated or incinerated and rendered nonhazardous. We believe it is obviously counterproductive to tax activities that you want to encourage.

CONCLUSIONS

I will now briefly summarize my conclusions, based on our 1984 report, as well as developments since that time.

1. It is clear that the cleanup of waste disposal sites will require significant funding over the next decade and perhaps beyond. Because the required funds are many times larger than had been provided for in the 1980 CERCLA legislation, Congress must design a revenue source with great care.

2. The 1980 CERCLA feedstock taxes are poorly designed as a mechanism for financing hazardous waste cleanup. They are hazardous to the health of the petrochemical industry. They suffer from one of the major defects of public finance in that they are intermediate product taxes in an industry that is heavily exposed to international trade.

3. Our analysis finds that raising the chemical feedstock taxes would lead to a marked deterioration in the competitiveness of the domestic petrochemical industry, with a dramatic rise in imports and sharp losses of exports.

Because of the poor design of the feedstock taxes, along with their potential for worsening the international competitiveness of the petrochemical industry, I recommend these taxes be repealed and be replaced with less distortionary taxes.

4. The best revenue alternative is an earmarked broad-based tax, such as the corporate net receipts tax analyzed above. In addition, a waste disposal tax would be a useful and environmentally sound source of revenues. Either of these two sources would induce very low levels of economic inefficiency; would distort international trade very little; and, in my view, would spread the burden of cleanup costs widely and fairly across the community.

EXECUTIVE SUMMARY

1. Introduction

With the passage of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), the Superfund Trust Fund was established at $1.6 billion for the period 1980–1985. Congressional hearings have already begun on reauthorization of Superfund for the next five-year period. The Environmental Protection Agency (EPA) has preliminarily estimated that the cleanup of the National Priority List (NPL) hazardous waste sites may cost five or ten times the initial trust fund amount.

A cleanup operation, now on a scale far larger than was envisoned earlier, will require higher CERCLA taxes. Unless such an expanded program is stretched over a longer period of time, the current CERCLA tax rates must be increased sharply or the tax base must be substantially broadened. Congressional proposals to finance an expanded Superfund have included higher tax rates on feedstocks, adding more inorganic chemicals and metals to the taxable list, taxing certain chemical components of gasoline, and taxing the disposal of hazardous waste.

This study is intended to evaluate the economic impact of increases in CERCLA taxes and to assess whether alternative funding approaches would better accomplish the public policy objectives associated with financing Superfund.

2. The Hazardous Waste Problem and the Federal Government Response

Until the mid-1970s, there was virtually no federal, state, and local legislation dealing with the treatment and disposal of hazardous waste. In 1976, the Resource Conservation and Recovery Act (RCRA) was passed, establishing a regulatory system by which the federal and state governments could track hazardous wastes from generation to disposal. Although it required the safe and secure treating, storing, and disposal of hazardous wastes, the law did not address the issue of abandoned hazardous waste sites. The first systematic study of the hazardous waste site problem was completed for EPA in 1979. By 1984, EPA had identified about 16,400 abandoned hazardous waste sites and estimated the cost of cleanup between $5 million and $10 million per-site, for a total cost of $8 billion to $16 billion.

In 1980, Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The Act provides for a trust fund ("the Superfund") of $1.6 billion over five years, with industry taxes on petroleum, eleven primary petrochemicals, and 31 inorganic raw materials paying 87.5% of the fund. General revenues provide the remaining 12.5%. The tax was designed to be paid 65% by the petrochemical industry, 20% by producers of inorganic materials, and 15% by petroleum refining.

The Superfund was intended to be used for emergency response and longer term remedial work to clean and close hazardous waste sites. The law also includes a Post-Closure Liability Fund, financed by fees on each unit of hazardous waste that is received by a permitted disposal facility. This fund limits operator liability and is intended to provide cleanup money after closure of a site.

As experience has been gained in the cleanup of hazardous waste, EPA has developed data about the chemicals in the NPL waste sites. We have reviewed these data and have identified, in many instances, the industries that produced the chemicals, the industries that disposed of the chemicals, and the industries of those companies that owned the sites. The data show that the disposers of hazardous wastes and site owners extend far beyond the chemical and petroleum refining industries that currently account for just 44% of the mentions of identifiable disposers and pay the lion's share of the CERCLA tax. The other 56% of identifiable disposers, representing a wide variety of industries ranging from lumber and wood products to metal industries and municipal services, are not subject now to CERCLA tax.

With the CERCLA reauthorization under debate, we turn to review the rationale for funding mechanisms, as well as the equity and economic impact of potentially large increases in tax rates.

3. Public Policy Objectives of Hazardous Waste Legislation

NPL sites fall into two classes—those where legal responsibility is determined, and those where it is not. Where responsibility is known, cleanup may be voluntary or forced by litigation. In cases where the responsible parties cannot be identified or made to comply (e.g., those that are out of business), Superfund revenues are used.

While RCRA and other pollution control laws (such as the Safe Drinking Water Act) are the principal vehicles for preventing future hazardous waste problems, two additional methods can be used to create economic incentives for ensuring that firms face social costs in their production and disposal decision (called "internalization"): liability rules with damages, and direct internalization through taxes. In some circumstances, CERCLA provides for a liability standard for cleanup of abandoned sites, so disposers know they may be forced to pay more for cleanup than proper disposal would have cost in the first place. This standard should create a strong incentive for proper disposal. Internalization through taxes requires a tax system that penalizes improper disposal and rewards ultimate safe disposal. Providing incentives for proper disposal is only one of several public policy objectives in considering the structure of the Superfund taxes.

We have identified four criteria for raising Superfund revenues:

Revenue Adequacy. The taxes should provide revenues adequate for the mandate of the Trust Fund.

Administrative Simplicity. The taxes should be unambiguous, simple to calculate, and easy to enforce. These objectives are aided by taxing a base that is routinely accounted for in the normal course of business.

Equity. Equity, or fairness, is highly subjective. When the parties legally responsible for disposing of the hazards are known, it is held that they be liable for cleanup. When the parties that disposed of the wastes which now pose a hazardous threat are not known, no longer exist, or lack the resources to perform the cleanup, equity (in the sense of responsibility) is unattainable. In deciding upon how to pay for cleanup where responsibility is unknown, four groups may be singled out because they benefit from the activities in some way: (1) producers who enjoyed lower costs,

(2) disposers of hazardous waste who benefited from lower standards and, hence, lower costs for disposal, (3) consumers who benefited from lower prices, and (4) individuals who live in the vicinity of hazardous waste sites and would suffer if cleanup were not undertaken. The past benefits of the products that have caused hazardous waste problems, and of today's cleanup, are widely dispersed. To properly apportion cost to all groups, everyone who has ever used a styrofoam cup, bought pantyhose, taken aspirin, or wrapped a sandwich in plastic wrap would have to be taxed.

Economic Efficiency. Economic efficiency, as applied to these taxes, consists of two goals: (a) providing incentives for the appropriate disposal of wastes, so that the external costs of producing and disposing of hazardous substances will be "internalized" by taxes that close the gap between costs and private costs, and (b) raising revenues in a way that minimizes economic distortions.

Attainment of goal (a) suggests that the taxes should fall on those substances that impose risks on the public, and not on nonhazardous substances or substances that are detoxified, neutralized, or recycled (and hence, are not hazardous wastes). Goal (b) is attained by setting taxes that minimize economic dislocations, i.e., do not distort the allocation of resources (except to internalize costs) and do not distort international trade.

4. Economic Impact Analysis

To analyze the effect of CERCLA taxes, we developed two models that measure their impacts on international trade and tax incidence.

Petrochemical Trade Model. Economic theory predicts that an increase in taxes on U.S. production of petrochemicals will cause U.S. exports to decline and imports to increase by reducing the cost advantage of U.S. petrochemical production relative to foreign production. The petrochemical trade model is designed to show how CERCLA taxes affect the U.S. imports and exports of a sample of primary petrochemicals and their principal derivatives. From an economic point of view, the CERCLA tax is an export tax on both the primary petrochemical and its derivatives, and a subsidy to imports of the derivatives. For primary petrochemicals, only the exports are disadvantaged because an equivalent tariff is levied on imports into the United States. Derivatives face competition both in the export markets to other countries and in the domestic market from cheaper imports.

The model was run for two sets of primary/derivative chemicals—propylene/polypropylene and benzene/styrene—using three alternative tax rates—the tax rates proposed in H.R. 5640, $24.35 per ton (a fivefold increase of CERCLA rates), and $48.70 per ton (a tenfold increase). The range of the trade impacts on derivatives are as follows:

	Export losses [percent]	Import gains [percent]
Polypropylene	6–29	400–2200
Styrene	11–40	400–1500

Our results suggest that if a tax of $24.35 per ton were levied on propylene, the U.S. propylene and polypropylene industry would lose $250 million in sales. This loss is due to reduced domestic production of propylene and polypropylene resulting from more imports and fewer exports of polypropylene.

For benzene and styrene, the trade effects on a percentage basis are greater—both benzene and styrene exports are reduced. The total sales decline for domestic producers is estimated to be $140 million. These trade impacts illustrate the potential damage that can be caused by high feedstock taxes.

Tax Incidence Model. To analyze the effects of CERCLA taxes, we developed an empirical flow model of the incidence of taxes in the production of petrochemical products. The model analyzes the economic effects of a tax that is levied on the feedstock propylene, compared to a tax that is levied on a downstream product, phenol. The results show that a propylene tax raises the price of a nonhazardous derivative such as polypropylene as well as a toxic derivative like phenol. In contrast, a phenol tax has very little effect on the price or quantity of polypropylene. The results show that feedstock taxes are too indiscriminate to be effective externality taxes; the burden of the tax on feedstocks falls on both nonhazardous as well as hazardous substances.

5. Alternatives for Financing Superfund

Alternative Revenue Sources. We examined the following eight taxes in three categories: broad-based taxes, intermediate product taxes, and hazardous substance and waste taxes.

Broad-based Taxes: Individual income tax; corporate income tax; and corporate receipts tax.

Intermediate Product Taxes: Hydrocarbons tax; and chemical feedstocks tax.

Hazardous Substance and Waste Taxes: Production tax; waste generation tax; and

Criteria: We evaluated each of these alternative taxes by the four criteria, with the following results:

Revenue adequacy is best served by the broad-based taxes and the hydrocarbons tax. These are relatively small taxes levied on large tax bases. The chemical feedstocks tax becomes less predictable as materials substitution and trade losses reduce the revenue stream. Hazardous substance and waste taxes are the least predictable method to raise revenues.

Administrative simplicity is best served by the broad-based taxes and the hydrocarbons tax because they are either surcharges on existing taxes or levied on quantities that are already reported, like corporate receipts and refinery crude oil runs. Administering the feedstock tax is not simple, as shown by the controversy over proposed taxation of certain chemicals within gasoline process streams. Moving the tax base downstream from feedstocks to hazardous substances or wastes, the number of taxpayers grows, and for hazardous substances, the tax base is, as yet, undefined. Varying the tax rate by degree of hazard or by disposal technology also increases the complexity of administering the tax.

Equity, or fairness—in the sense of charging those responsible—is not possible for "orphaned" dumpsites. Furthermore, the benefits, both of the products that caused the waste problems in the past and of the today's cleanup are spread widely throughout society. No tax could be levied that would remotely succeed in approximating the benefits of past acts or present cleanup.

The notion of equity is inherently subjective. But in situations where the benefits of public programs are widely dispersed and when the beneficiaries are hard to identify Congress most often relies on broad-based taxes as the fairest form of payment. Waste-end taxes are also sometimes viewed as fair because they are attached to the very activities that require the present cleanup. Some would view intermediate product taxes as fair because they fall on some of the producers whose products ultimately contributed to the current need for cleanup.

Economic efficiency can be assessed in terms of economic incentives and economic distortions. The broad-based taxes and the intermediate product taxes have no or few economic incentives to restrain generating hazardous waste or to encourage desirable disposal. Taxes on hazardous waste help internalize the risks to society, but may place an additional disincentive on compliance with RCRA. Economic distortions are modest for broad-based taxes and for intermediate product taxes, if their rates are low. Chemical feedstock taxes, if raised much above their current levels, could result in loss of exports, import substitution, and other distortions that could cause serious economic inefficiencies.

Assessment of CERCLA Taxes as a Revenue Source. The CERCLA chemical feedstocks tax fails most of the criteria for a useful tax. Its principal virtue is that it is already in place and (with fines and interest) has raised the targeted revenue. At much higher rates, its revenue adequacy, with an eroding tax base, is questionable. Since the purpose of Superfund is to raise money to pay for cleaning up orphaned dumpsites, there are no strong equity arguments in favor of any one of these taxes. On the grounds of economic efficiency, the CERCLA chemical feedstock tax does not internalize the hazardous waste externality, while the tax discriminates against U.S. production of basic petrochemicals, their derivatives, and final products.

Recommendation. What revenue sources are more suitable for financing Superfund? Evaluating the other tax alternatives, two that satisfy the criteria are the corporate receipts tax (which we have called the "Business Environmental Fee") and the hazardous waste disposal tax. The corporate receipts tax is a nondistortionary way to raise large revenues. It can be simply administered and, as a broad-based tax, spreads the burden across a wide range of commodities.

The hazardous waste disposal tax is an attractive option because it is close to the source of the problem and may help internalize associated social costs. The waste-end tax would tie into the administrative apparatus of RCRA, taxing hazardous wastes that are already tracked. The tax would be levied at time of disposal, whether onsite or offsite, and upon entering long-term storage.

6. Business Environmental Fee

The Business Environmental Fee is a tax on corporate net receipts—gross receipts minus cost of goods sold. It satisfies most selection criteria: it is a secure source of revenues; it is easy to administer because it is based on existing tax forms and records; it can be viewed as fair because of the widespread source of hazardous waste; and it produces minimal distortions.

The tax would be levied on line 3 of IRS Form 1120, the U.S. Corporation Income Tax. The tax would be paid only by companies with net receipts in excess of $5 million. Dividends from foreign subsidiaries and net receipts of foreign branches would be excluded. Foreign companies that do not file a Form 1120 would pay no tax. It is intended that the tax would be deductible for federal and state corporate income tax purposes (as the CERCLA taxes now are), and legislation or rulings to that effect would ensure such a status.

To generate $1 billion in revenues in 1985, a rate of .09% (or $9.00 per $10,000 in net receipts) would be levied.

The tax would be paid by approximately 46,000 companies, out of the 3.5 million that are expected to file corporate tax returns in 1985. More than half of the tax would be paid by the manufacturing sector.

The tax may be controversial because it takes the federal government into a new tax, which will raise concerns about the tax being used for other federal programs in the future. However, specifically earmarking the fee for Superfund financing, and inserting a sunset provision once the revenue target is met, may help quiet this concern.

7. Hazardous Waste Disposal Tax

The Hazardous Waste Disposal Tax is a supplementary revenue source to the Business Environmental Fee. The waste-end tax will be levied on the disposal of hazardous wastes as defined in RCRA regulations (40 CFR 261). The tax would be incurred at the time when hazardous waste is disposed of onsite, stored onsite for more than one year, or received at an offsite facility for either storage or disposal.

For purposes of the tax, the taxable events are disposal or long-term storage. Incineration, recycling, and treatment are not taxed, but waste residue from these activities is taxed if it is a RCRA waste. The tax should be levied on the basis of wet weight.

The tax structure should be based on degree of hazard and type of disposal. Degree of hazard should reflect three levels of waste:

A. Acutely Hazardous Wastes—those RCRA wastes that meet high toxicity, carcinogenic, teratogenic, or mutagenic criteria, including all P and U prefix wastes.

B. Hazardous Wastes—RCRA characteristic wastes that exceed standards for ignitability, reactivity, corrosivity, and extraction procedure toxicity (all D prefix wastes) and F and K prefix process wastes.

C. Low Hazard Wastes—high volume, low hazard wastes.

The tax rate should vary by type of waste, with hazardous waste paying a base rate, acutely hazardous waste paying a rate many times the base rate, and low hazard waste paying a rate below the base rate.

The taxes should also vary with disposal methods—underground injection in EPA-approved wells and long-term storage in containers and tanks paying one rate, while landfill and surface impoundment pay a higher rate. The suggested level of tax is the following:

TAX RATE PER TON

	Underground injection and long-term storage	Other disposal
Type A Waste (per ton)	$5	$30
Type B Waste (per ton)	1	6
Type C Waste (per ton)	([1])	([1])

[1] To be determined.

These rates are illustrative; we recommend that the National Academy of Sciences be commissioned to conduct a thorough study of which wastes should be classified in the various categories and what an appropriate tax rate would be for each category of waste and type of disposal or storage.

Using the data in EPA's Westat survey of national waste disposal, we have calculated the above tax rates in order to raise approximately $300 million in revenues in 1985.

Based on Westat data, we estimate that the taxes will be paid by approximately 5,000 establishments. The number of taxpaying entities is reduced by taxing disposal and long-term storage rather than generation. Any generator, large or small, that disposes or stores onsite will pay the tax. Small generators that ship waste offsite will not pay the tax directly. The tax will be paid by disposal facilities, which serve many generators, and may be recovered in the disposal fee.

To implement the waste-end tax, a number of minor administrative changes must be made to current regulatory practices. Among these are modifying the RCRA framework to include additional reporting requirements for onsite storage and disposal, changing the RCRA manifest to show the taxable status of transferred wastes, and possibly integrating state and federal efforts to classify wastes.

Mr. ANTHONY. Thank you, Dr. Nordhaus. I have a couple of questions. Mr. Fortuna, since you are familiar with the incineration done by ENSCO, which is located in my home town, I would like to ask you about the administration's proposal—H.R. 1342, the bill proposes a waste-end tax of $6 a ton on incineration and $5 on deep well injection. In looking at this proposal, you would draw the conclusion that the writer of the legislation believes incineration is more dangerous, because it costs more and since it costs more, maybe ENSCO should be encouraged to dispose of this waste in some other method. I just wondered if you had any response to that?

Mr. FORTUNA. Whoever put together the administration's bill, I think, knows very little about RCRA and significantly less about how the hazardous waste market place works. I mean, indeed, if you are faced with those options, just on its very face, incineration already costs more because you are permanently destroying the material rather than just simply injecting it, with all the attendant long-term uncertainties of where that waste is going. To then, tax incineration at a higher rate, is just to further discourage it. And in fact, let us not even look at incineration as the relative option to deep well injection. Many other materials that are deep welled could be reclaimed, solvents could be reclaimed which are probably the best way to handle many solvents rather than incineration. That, too, would be taxed under the administration's proposal at that higher level than that deep well injection. Indeed, under the administration's proposal deep well injection gets a very generous break. I would commend them, however, for approaching the issue on a wet-weight basis as opposed to dry weight, but their proposal totally exempts publically owned treatment works or public sewer discharges. It taxes incineration at a higher rate and it just relys too much on waste end, it is going to fall of its own weight. The more that you rely on waste-end and the more that the base of revenue raising activity shrinks, such as land disposal, the less reliable source of revenue it is.

Mr. ANTHONY. I take it that you are familiar with the Chemical Manufacturers Association's proposal for dry weight?

Mr. FORTUNA. Dry-weight, yes.

Mr. ANTHONY. Explain to me how the difference would be in the tax, using the hypothetical that you gave when you came in?

Mr. FORTUNA. Suppose that you had a truck that came into a deep-well facility, a standard 5,000 gallon tanker truck and it contained a very toxic material such as hydrochloride acid with a ph 1 or a very strong acid, that truck if it were taxed on a wet-weight basis or just on the basis of the 5,000 gallons would pay approximately $125 per truckload if the tax were $5 per wet-weight ton.

If, however, you taxed it on a $5 per dry-weight ton basis, the total amount of actually solid or molecularly hydrochloric acid that is in that tanker car truck is far less than a tenth of a ton and if you were to tax that tanker car truck at $5 per dry-weight ton, you would pay approximately 36 cents.

Mr. ANTHONY. So what you are saying is that CMA is not taking into consideration the toxicity of the compound that they are seeking to destroy or to store?

Mr. FORTUNA. That is right.

Quite to the contrary of what the CMA people or the people on the previous panel had to say, where dry weight better reflects toxicity, quite to the contrary, it substantially underestimates and understates toxicity depending on what you are dealing with.

There is just no relationship whatsoever between dry weight and toxicity.

Mr. ANTHONY. Do any of the other panelists wish to comment on that?

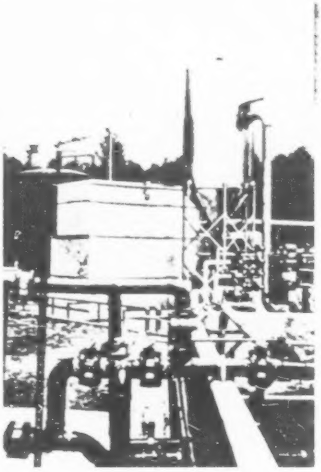
Ms. PIRAGES. I would just like to clarify one point. For most deep-well operations you would not have very concentrated hydrochloric acid being put down the system. Deep-well injection is used for very dilute aqueous systems and the one reason for a dry-weight ton is that the amount of water injected is very high as compared to the amount of solids or toxic constituents. I tend to agree with Mr. Fortuna, however, that a wet-weight basis is better because what you are doing with a dry weight is encouraging dilution of waste and discharge into the public sewer systems rather than proper treatment and disposal.

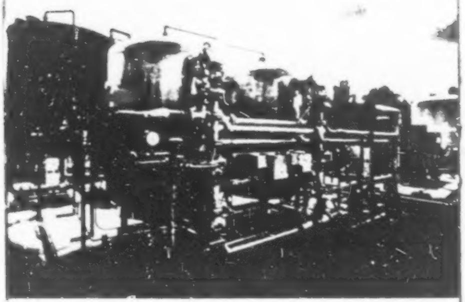
Mr. FORTUNA. May I just follow-up for one brief second? I would be very happy, Mr. Chairman, to provide the committee with a brochure of commercial deep-well operators that shows what they take and what they do not take, and they take just about everything—strong acid, strong bases, you name it, they will take it.

Mr. ANTHONY. Would you provide that for the record, please?

Mr. FORTUNA. I would be happy to do that.

[The following was subsequently received:]





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Gibraltar's plant site is located in Smith County, 11 miles northeast of Tyler, Texas, and 100 miles east of Dallas on State Highway 155, just off Interstate Highway 20. This location offers a considerable freight advantage to many of our customers and enables us to conveniently and economically serve liquid waste generators throughout north, east and central Texas, as well as those in Louisiana, Arkansas and Oklahoma.

"Gibraltar accepts a wide range of liquid wastes."

The Gibraltar injection well is able to inject a wide variety of low-solids organic and inorganic liquids. Here are a few of the chemicals and industrial wastes that Gibraltar can accept:

Acids
Organics
Inorganics
Printing Inks
Brines
Cooling Oils
Caustics
Solvents
Phenolic Wastes
Dyes
Pharmaceuticals
Cutting Oils
Etching, Pickling, Plating Solutions
Contaminated Ground and Surface Waters
Pesticide-Herbicide Solutions

Mr. **Anthony**. I have two quick questions and one is to Mr. Hoffman.

You were talking about the problems with the tax and particularly timing and I just wondered if you could comment on the difference between environmental regulations concerning hazardous waste and the potential tax regulations pertaining to the waste and whether or not, you could see any difficulties between the two?

Mr. **Hoffman**. I think that the tax ought to be structured so that it is tied very closely into the environmental regulations. If you are careful in the way that you structure it, so that it works that way, then I do not think that there will be that much difficulty. The current proposals freeze the environmental regulations in some measure. That is, the tax is levied on hazardous waste, as hazardous taste is indentified at the time that the tax is enacted. The definition for environmental purposes is going to change after that time, so that after the tax is enacted, there will be a divergence between the tax definition and the environmental definition.

I see some complexity arising out of that. One solution would be for Congress to be prepared periodically to revisit this issue. For example, once each year, during its consideration of other miscellaneous revenue bills, Congress could be prepared to update the tax definition to take into account changes that EPA has made after the tax is enacted.

Mr. **Anthony**. Thank you, very much.

Dr. Nordhaus, you mentioned something that really has gotten my attention.

You say that the feedstock is flawed and in your study you say that it distorts international trade.

I wish that you could explain that a little bit more in detail for the record, because this is an area that I have a great deal of concern with.

Mr. **Nordhaus**. Yes, I would be glad to.

The structure of the feedstock taxes as currently enacted, is the following: It taxes primary petrochemicals and certain inorganic substances, and it taxes imports of those same materials. However, there is no rebate on the exports of downstream chemicals or compensating import levy on the content of the downstream derivatives. In effect, if you produce a petrochemical abroad, and import it into the United States in the form of a downstream derivative, then we are basically subsidizing the import by taxing domestic production.

Whereas the normal thing that you associate with this committee, is to tax imports and we are now subsidizing imports.

We estimated the tax impact for two chemicals and looked at another study and found that, at the levels of taxation proposed in some of the bills before this committee, there would be very substantial effects on international trade of the feedstock taxes.

Mr. **Anthony**. What if we expanded the tax to the derivatives, the import derivatives?

Mr. Florio, today, for instance, earlier today, said that he has changed his position since last year and that he would support that and ask the committee to take a look at that.

Would that tend to make a correction here?

Mr. **Nordhaus**. Well, I think that ideally, if you could, in fact, impose a tax and let it flow downstream, so to speak, that would be a solution. We looked into that and it seems to me that that is in fact, unworkable from a tax policy point of view.

If I might just submit for the record, there was a study done for a committee of the House by DRI which shows what the downstream derivatives looked like. It looks like a plate of spaghetti, in fact, with great complexity of downstream derivatives.

I think that it will be very difficult, in fact, to track that tax. Moreover I think that there is——

Mr. **Anthony**. Without objection it will be accepted.

Mr. **Nordhaus**. Yes, I would like to submit that with the cover page that went with that testimony.

Mr. **Anthony**. Without objection.

[The information follows:]

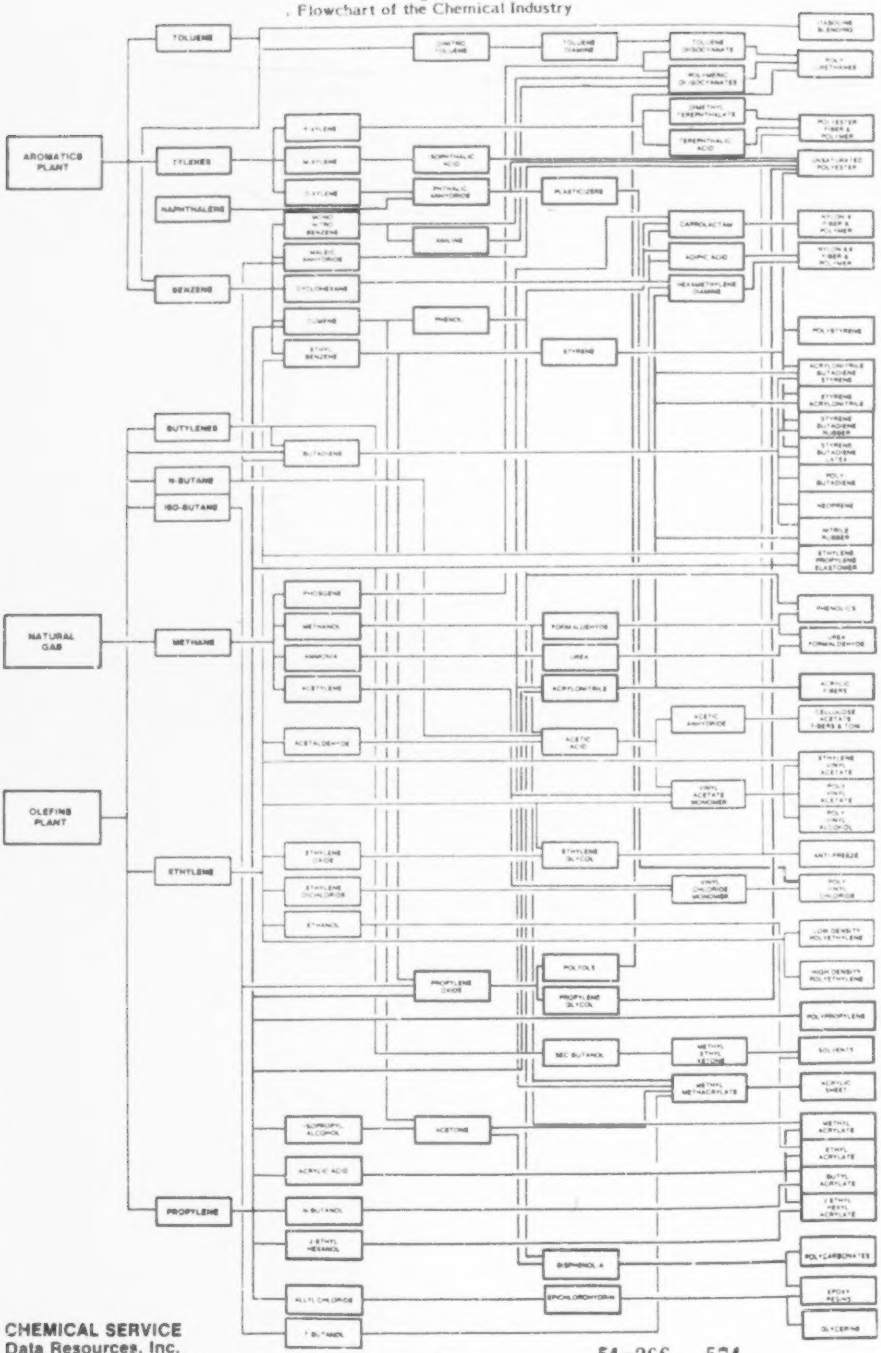
DRI Data Resources, Inc.

SUPERFUND AND THE INTERNATIONAL COMPETITIVE POSITION OF THE CHEMICAL INDUSTRY

by
Ronald M. Whitfield
Vice President, Chemical Services
Data Resources, Inc.
24 Hartwell Avenue
Lexington, Massachusetts 02173

Presented to the Subcommittee on Commerce, Transportation and Tourism of the U.S. House of Representatives Committee on Energy and Commerce, March 21, 1985, at the Rayburn House Office Building, Washington, D.C.

Figure 1
. Flowchart of the Chemical Industry


AROMATICS PLANT
NATURAL GAS
OLEFINS PLANT
TOLUENE
XYLENES
NAPHTHALENE
BENZENE
BUTYLENES
N-BUTANE
ISO-BUTANE
METHANE
ETHYLENE
PROPYLENE
P-XYLENE
M-XYLENE
O-XYLENE
MONO NITRO BENZENE
MALEIC ANHYDRIDE
CYCLOHEXANE
CUMENE
ETHYL BENZENE
BUTADIENE
PHOSGENE
METHANOL
AMMONIA
ACETYLENE
ACETALDEHYDE
ETHYLENE OXIDE
ETHYLENE DICHLORIDE
ETHANOL
ISOPROPYL ALCOHOL
ACRYLIC ACID
N-BUTANOL
2-ETHYL HEXANOL
ALLYL CHLORIDE
T BUTANOL
DINITRO TOLUENE
ISOPHTHALIC ACID
PHTHALIC ANHYDRIDE
ANILINE
PHENOL
PROPYLENE OXIDE
ACETONE
TOLUENE DIAMINE
PLASTICIZERS
STYRENE
FORMALDEHYDE
UREA
ACRYLONITRILE
ACETIC ACID
ETHYLENE GLYCOL
POLYOLS
PROPYLENE GLYCOL
SEC BUTANOL
BISPHENOL A
EPICHLOROHYDRIN
TOLUENE DIISOCYANATE
POLYMERIC DI-ISOCYANATES
DIMETHYL TEREPHTHALATE
TEREPHTHALIC ACID
CAPROLACTAM
ADIPIC ACID
HEXAMETHYLENE DIAMINE
ACETIC ANHYDRIDE
VINYL ACETATE MONOMER
VINYL CHLORIDE MONOMER
METHYL ETHYL KETONE
METHYL METHACRYLATE
GASOLINE BLENDING
POLY URETHANES
POLYESTER FIBER & POLYMER
UNSATURATED POLYESTER
NYLON 6 FIBER & POLYMER
NYLON 6.6 FIBER & POLYMER
POLYSTYRENE
ACRYLONITRILE BUTADIENE STYRENE
STYRENE ACRYLONITRILE
STYRENE BUTADIENE RUBBER
STYRENE BUTADIENE LATEX
POLY-BUTADIENE
NEOPRENE
NITRILE RUBBER
ETHYLENE PROPYLENE ELASTOMER
PHENOLICS
UREA FORMALDEHYDE
ACRYLIC FIBERS
CELLULOSE ACETATE FIBERS & TOW
ETHYLENE VINYL ACETATE
POLY VINYL ACETATE
POLY VINYL ALCOHOL
ANTI-FREEZE
POLY VINYL CHLORIDE
LOW DENSITY POLYETHYLENE
HIGH DENSITY POLYETHYLENE
POLYPROPYLENE
SOLVENTS
ACRYLIC SHEET
METHYL ACRYLATE
ETHYL ACRYLATE
BUTYL ACRYLATE
2 ETHYL HEXYL ACRYLATE
POLYCARBONATES
EPOXY RESINS
GLYCERINE

CHEMICAL SERVICE
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Mr. ANTHONY. I hate to interrupt you, Dr. Nordhaus, we do have two bells and a vote and I want to allow any other members of the committee who may have some questions an opportunity before we adjourn.

Mr. GREGG. Professor, if you could explain to me basically you are saying that you want a value-added tax to pick up the cost of this.

Mr. NORDHAUS. The net receipts tax. is not exactly equivalent to a value-added tax, it is closer to a sales tax on corporate output with an exemption for purchases from other corporations.

But the net receipt tax is limited to large corporations, it is not on all entities.

Mr. GREGG. I guess that my question would be, that once we embark on that road, creating a new tax structure, what is to limit us from picking up all sorts of other funding problems which you may see down the road, with that sort of a tax and having opened a whole new door of taxation for the Nation?

Mr. NORDHAUS. Basically your good judgment would be the limit on that.

Mr. GREGG. Well, that is not much of a limit.

Mr. NORDHAUS. Well, I have great faith in that.

Mr. GREGG. Why would we not just go directly to the general fund? I mean if we are going to have sort of a broad tax?

Mr. NORDHAUS. Well, that is very clear.

I am specifically proposing an earmarked tax, which will allow two things. One, it will allow a minimal amount of funding to meet the needs of the Superfund program, to assure a secure funding for whatever period of time is desired. In addition, by earmarking the the fund, it would also allow a cap on speedup so that so that it would not be a runaway expenditure item.

But the basic reason why I propose moving to a broad-based tax is that the activities associated with orphaned Superfund sites are very widely dispersed. The ownership of the sites and the disposers are not, in fact, heavily concentrated in the taxed industries but they are very widely dispersed across our Nation. It is a very superficial logic, in my view, that associates only chemical production with the actual activities that have produced the problems in the past.

Mr. GREGG. Does that not also argue for using the General Fund?

Mr. NORDHAUS. It does and in other days I certainly would have recommended general revenues. But as you know, we have some enormous budget deficits in the years to come. Therefore, a program like this, which threatens to have high and unpredictable levels of spending, should be one with an earmarked tax and is therefore self funded.

Mr. GREGG. Thank you.

Mr. ANTHONY. The committee will stand in recess for sufficient time for the Members to go and vote.

Hopefully we can be back within 10 to 15 minutes.

[Whereupon, a brief recess was taken.]

Mr. ANTHONY. We will resume the hearing and if we could have the next panel please.

Martha Broad, resource specialist of the Natural Defense Resources Defense Council, Inc.

Blakeman Early, Sierra Club, Washington representative. Leslie Dach, associate director of energy and environment, National Audubon Society.

Your full testimony will be accepted for the record. We do have a 5 minute time limit and you are able to summarize your testimony in any manner as you deem appropriate and we will go with Martha Broad first, representing the Natural Resources Defense Council.

Mr. EARLY. If you do not mind, Mr. Chairman, we have arranged it so that I will go first and then Ms. Broad.

Mr. ANTHONY. All right, then we will hear from the Sierra Club with Mr. Early.

Mr. EARLY. That is correct.

STATEMENT OF A. BLAKEMAN EARLY, WASHINGTON REPRESENTATIVE, SIERRA CLUB

Mr. EARLY. Thank you very much, Mr. Chairman.

My name is Blakeman Early and I am the Washington representative of the Sierra Club and I want to thank you very much for the opportunity to appear here today.

I am going to read an abbreviation of my testimony, if I can, Mr. Chairman.

The current Superfund, we believe, must be greatly expanded. It is clear that the number of sites needing cleanup is enormous and EPA progress is wholly inadequate. Estimates of the cost of the program have increased while the Reagan administration proposes to continue the program at its current pace. But it is quite clear that the current pace of the program as well as the goals are inadequate.

Mr. Chairman, I would like to submit for the record a new report which has been recently released which documents just how inadequate the cleanup progress has been. This report prepared by the National Campaign Against Toxic Hazards found that 90 percent of the national priority sites which receive long-term cleanup moneys during the 5-year life of the current program, that in 1985 only 29 sites will receive long-term cleanup funding.

Mr. ANTHONY. Do you have that report with you?

Mr. EARLY. I do not have it with me, but I will provide it for the record, Mr. Chairman.

Mr. ANTHONY. Without objection, it will be accepted for the record.

Mr. EARLY. We support a level of funding that would enable the type of cleanup effort that would address many more sites in a much shorter time. Under the Reagan program it may take as long as 30 years to address the most serious sites and this is why, Mr. Chairman, we support H.R. 2022 introduced by Congressman Gerry Sikorski, which would raise and spend $11.7 billion over a 5-year period.

Obviously, should the Finance Committee choose to fund a program at less than this level, the program is going to have to be cut back and we think that it would do great damage to the increase in the size of the program, the size that is necessary to actually tackle the job the way that it should be tackled.

Anything along the size of the Reagan administration is obviously a program that is a steady-state program which means the snail's pace progress that we have seen in the program so far. This would be a great disappointment to the American public.

We believe that the bulk of the funds should be raised through the existing feedstock taxes, at a higher rate. The chemical industry is one of the least taxed industry sectors. We have not seen any evidence that an increase in the feedstock rates on the order of what this committee reported out last year and that the House passed, would adversely affect the industry.

The profitability of these industries remains strong. However, we do support the development of an import tax on intermediate chemicals, Mr. Chairman, that would offset any potential adverse impact that an increase in these rates might have on stimulating the import of intermediate chemicals.

We are very concerned about efforts to shift a substantial portion of the revenue-raising burden to a broad-based corporate tax. Not only does this depart from the polluter pays principal, but the committee may find that such a tax is ultimately unacceptable to the Congress and the result may be a very small Superfund or no Superfund at all.

My colleagues will cover some of the other major points made in my testimony, Mr. Chairman, and I will now turn to a discussion of the collection cap which is in the current law.

Under the current Superfund, if the EPA has allowed a certain level of funds to accumulate in the last 2 years of the program without spending them, collections of the feedstock taxes are automatically suspended. More than 55 percent in the next to last year, and 30 percent in the last year must be accumulated in order to trigger the suspension.

Let me point out, Mr. Chairman, that there are two typographical errors in my prepared statement and those numbers should be 55 percent and 30 percent and not 95 percent and 50 percent.

We believe that this provision serves only to encourage the Reagan administration to delay spending Superfund funds in order to terminate the feedstock tax as soon as possible. Every corporation subject to the tax will have the same agenda. This is, of course, exactly the opposite incentive that we want to provide in the Superfund program. It is important for the committee to consider the nature of the Superfund Program. It is inevitable that in the early years of a much enlarged program that large amounts of funds will accumulate. Much of the focus of the program will be on the remedial investigation and the feasibility studies. It will not be until the last year or two of the large cost construction portion of the program that construction will go into effect. It would be very unfortunate for the collection cap to be triggered just as EPA is forced to obligate these funds. This is why we support the elimination of the collection cap provision as the committee recommended last year, Mr. Chairman.

That concludes my testimony and I thank you.

Mr. ANTHONY. Thank you, very much.

[The prepared statement follows:]

STATEMENT OF A. BLAKEMAN EARLY, WASHINGTON REPRESENTATIVE, SIERRA CLUB

My name is A. Blakeman Early. I am Washington Representative of the Sierra Club. I appreciate the opportunity to testify before the Committee on Ways and Means.

THE MAGNITUDE OF THE SUPERFUND PROBLEM IS MUCH GREATER THAN WE THOUGHT

I will not dwell as long as I should on the scope of Superfund problems but quite clearly the estimates of the cost and scope of the problem are increasing at the same time that the Reagan Administration is attempting to reduce the level of commitment to the program. The Reagan bill is esentially designed to maintain the level of cleanup effort at current levels. This is unacceptable. We believe that recent reports only emphasize the need to expand the size of the Superfund program. This is clearly what the American public is demanding. The Office of Technology Assessment has increased its assessment of the total cost of hazardous substance release cleanups from $40 billion to $100 billion. The General Accounting Office has increased its worst case estimate from $26 billion to $39 billion. This figure would cover the capital cost of cleaning-up approximately 4,000 priority sites. Of course, a survey of state hazardous waste officials found that as many as 7,000 sites may need assistance.

We support a bill recently introduced by Representative Jerry Sikorski, H.R. 2022 that would greatly expand the number of sites and how quickly such sites are cleaned up. It would raise $11.7 billion over five years. Obviously, such a program would be far larger than that proposed by the Reagan administration or the modest increases provided in the bill reported by the Senate Environment Committee, S. 51.

THE FEEDSTOCK TAX SHOULD REMAIN THE PRINCIPAL REVENUE SOURCE

We believe that the oil and chemical feedstock tax should continue to be the principal source of funding for Superfund. We also believe that this can be achieved without a significant adverse impact on the oil and chemical industries. The passage of H.R. 5640 by the Ways and Means Committee with rates that tripled on average the feedstock taxes in present law indicates that the Ways and Means Committee, too, believed little significant adverse impact would be felt.

Consider the following facts. First, the chemical industry is not a very heavily taxed industry. Indeed, according to a study by the Joint Tax Committee, in 1983 the chemical industry had the lowest U.S. effective tax rate among 18 industries studied.

Second, all legislative proposals have contained a cap on the total tax rate to ensure that rates will not exceed be too onerous. In H.R. 2022, 3 percent of the retail value of each chemical feedstock taxed.

Third, a study sponsored by ARCO, Inc. of the impact of rates in H.R. 5640 found the impact to create only a 2 percent reduction in production, well within the margin of error for such econometric studies. (See Attachment 1) The study did not even take into account subsequent changes made in the House-passed version of H.R. 5640 that excluded exported feedstocks from the tax. The Arco study found that the empact of the increased tax on sales price of the studied substances to be no more than 2% for feedstock chemicals and .5% for their derivatives.

Fourth, an increased tax on crude oil, even at $0.15 per barrel, represents only a .006 percent increase in price of a barrel of crude oil, a cost that clearly can be passed on to crude oil consumers.

Fifth, the profitability of the companies currently contributing approximately 70% of the feedstock tax remains high. (See Attachment 2).

We do strongly support the passage of effective provisions to tax, at a comparable rate to the feedstock rate, imported intermediate chemicals which are derived from taxable feedstocks. These chemicals would escape taxation under current law. Clearly, it is important to close this loophole, in order to preserve the competitive position of domestically produced chemicals in the U.S. marketplace.

OTHER REVENUE SCHEMES MUST BE RELIABLE

We are very concerned about efforts to shift the tax to other forms of taxation. It must be demonstrated that these tax proposals are administerable, reliable, and politically feasible. For instance, shifting the tax to a net receipts tax on all corporations both departs from the "polluters pay" principle because it taxes industries that have had nothing to do with the use or handling of hazardous substances. Obviously, these industries will fight to avoid shouldering the Superfund burden. They may even work to minimize the size and scope of the Superfund program, which would be an unfortunate outcome. It would be a major tragedy for the Committee to shift from the feedstock approach to a broad-based corporate tax approach only to have such provisions cause defeat of the superfund legislation.

We can not pretend to be tax experts and evaluate every possible variation of a broad-based corporate tax dedicated to Superfund. Quite clearly, though, approaches such as proposed by Senator Bentsen in S. 957 raise concerns about creating a large administrative burden by taxing a very large number of tax payers. Indeed, the Chafee-Mitchell bill, S.955 appears to be more advantageous from an administrative standpoint because the Treasury Department need not get emersed in defining what tax. We will support any reasonable tax that will reliably provide funds needed to greatly expand the current Superfund program as is provided in H.R. 2022. But we can not support a new tax approach that is politically unreliable, yet fails to create a much larger program.

THE WASTE-END TAX SHOULD NOT BE MADE A MAJOR REVENUE SOURCE

A shift to the waste-end tax would substitute a much less reliable tax scheme for the highly reliable one in current law, because we cannot accurately assess the amounts of waste currently generated. For example, the most recent survey done for EPA provides an estimate that is only accurate within + or −50 percent, with a degree of confidence of 95 percent. We therefore do not consider it wise to shift in a major way to an unpredictable tax base. We do not believe that revenues of more than approximately $300 million can be dependably raised through a waste-end approach.

Proposals to shift to the waste-end tax really do not shift the tax burden away from the chemical industry. As I noted above, the chemical industry generates 86 percent of hazardous waste currently regulated. This fundamental fact is reinforced by a CMA analysis of the Administration bill's waste-end tax. It found that two companies pay over 50 percent of the tax, six companies pay over 76 percent of the tax, and thirteen companies would pay over 90 percent of the tax.

In addition, the waste-end tax is only applicable to wastes which EPA identifies in accordance with RCRA. EPA has been under tremendous pressure to de-list wastes it has already identified and minimize the number of additional wastes it adds to the hazardous list. This pressure sparked the passage of provisions in the RCRA amendments passed last year which require EPA to more aggressively list wastes and to narrow EPA's ability to de-list hazardous wastes without public review. An imposition of a waste-end tax merely adds a new set of financial stakes to the regulatory stakes associated with the listing or de-listing decision. Thus, the waste-end tax and the RCRA amendments work against each other.

Finally, we will not support waste-end proposals, such as those in the Reagan (H.R. 1342) and Hall (H.R. 2208) bills, provide rates that favor deep-well injection. It is paramount that waste-end tax rates not encourage the use of any particular management technique. Favorable rates for deep-well injection could result in the encouragement of a new generation of underground Superfund sites. As my colleague Ms. Broad will describe in detail, we believe that the safety issues associated with deep-well injection have not been satisfactorily examined or answered. Deep-well injection poses health and environmental threats because of our limited knowledge of the impact of waste's movement under pressure in the underground strata, our concerns regarding the adequacy of regulation, and the fact that once wastes have been injected, they are impossible to recover. In H.R. 2208, the $50 dry weight alternative tax is calculated on the assumption that 6% of the volume of deep-well disposed wastes are in fact hazardous, thus providing what the Chemical Manufacturers Association contend is a "fair" share of the revenue. However, a recent survey conducted for CMA indicates that underground injection wastes may contain only 4% solids, thus substantially decreasing the revenue contribution from this activity. It is by no means clear that the "wet weight" rates in H.R. 2018, the waste end proposal introduced by Representatives Wyden and Schneider do not also favor deep-well disposal, when the cost of disposal is taken into account. However, H.R. 2018 does avoid the pitfalls of the dry-weight formula by basing all rates on wet weight.

The Hall and Wyden bills also do not tax hazardous wastes that are treated as part of a wastewater treatment system. We have serious concerns that such a scheme might promote the additional use of such systems which are by no means free of impact on health and the environment. Industrial wastewater systems typically use impoundments, the majority of which are unlined, which clearly can cause serious contamination problems. For this reason the approach found in the Sikorski bill, H.R. 2022, avoids the problem of creating a favorable incentive to use wastewater treatment in lieu of other management options.

Should the Ways and Means Committee choose to adopt a waste-end revenue proposal, we urge it to choose one the focuses on raising revenue and which does not create biases in favor of a waste management option we may later regret.

THE POST-CLOSURE LIABILITY FUND SHOULD BE ELIMINATED

The Post-Closure Liability Fund (PCLF) was enacted as part of Superfund in 1980 without any serious debate or discussion. The House was forced to accept the Senate provisions as part of a compromise package enacted during the lame-duck session. The original concept was to provide a source of funds for cleanup and damages arising from leaks which occur from sites that have already closed and the owner has disappeared or is insolvent. The PCLF relieves site owners—who may in fact be solvent and available—from liability five years after the site is closed. In the site owner's place is a fund which in all likelihood is far too small to cover all potential liabilities. We believe that those who may be exposed to hazardous substances which have leaked from closed sites many years hence are worse off under the PCLF program than they are under existing law. Here are a few of the flaws in the PCLF program:

1. EPA's regulations are currently inadequate. They provide little assurance that sites will not leak after closure. The transfer of liability from the owner to the PCLF eliminates the best incentive the owner has to manage wastes more safely than EPA requires.
2. It is impossible to determine how many sites will ultimately leak and the amount of cleanup and compensation funds that will be needed. To the extent that the PCLF is under-funded, land disposal, the least desirable option, is subsidized relative to more desirable alternatives.
3. Although all sites will contribute to the PCLF, only those that do not leak within five years of closure can transfer liability. Those that do leak within five years and do not qualify to use the PCLF have had needed funds diverted to sites which may not pose problems for many years. Where do the victims of these sites turn?
4. States will be delegated supervision of closure operations. Yet these states will bear no responsibility for letting an inadequate site transfer liability to the PCLF. Indeed, they may have an incentive to transfer liability for as many sites as possible to avoid paying for future cleanups using out-of-state funds.

The PCLF program is fatally flawed. We urge the Committee to let it die. Currently operating sites will not qualify for some time, because EPA has issued few final permits. If the Committee feels compelled to revisit the issue in the future, it could do so without the burden of an existing "lame duck" program.

THE COLLECTION CAP SHOULD BE ELIMINATED

Under the current Superfund law, if the EPA has allowed a certain level of funds to accumulate during the last two years of the program without spending them, collections of the feedstock taxes are automatically suspended. More than 55 percent in the next to last year and 30 percent in the last year must be accumulated in order to trigger this suspension. We believe that this provision serves only to encourage the Reagan Administration to delay spending superfund funds in order to terminate the feedstock tax as soon as possible. Every corporation subject to the tax will have the same agenda. This is, of course, exactly the opposite incentive that we want to provide in the Superfund program. This provision was devised in 1980 because some Members believed that so few sites would need cleanup that all the revenues might not be needed. This is clearly no longer the case. Quite clearly, EPA will need to spend all funds authorized and collected. The only question is whether OMB will respond to the will of the Congress and allow EPA to do the job it is mandated to do.

In addition, it is important for the Committee to consider the nature of the superfund program. It is inevitable that in the early years of a much enlarged program that large amounts of funds will accumulate. Much of the focus of the program will be on the remedial investigation and feasibility studies. It will not be until the last year or two that the large cost construction portion of the program will go into effect. It would be very unfortunate for the collection suspension to be triggered just as EPA is poised to obligate these funds to the construction phase of the program.

Attachment 1-A

EXHIBIT C.4—OUTPUT OF THE PETROCHEMICAL TRADE MODEL

	Propylene		Polypropylene	
	United States	Rest of world	United States	Rest of world
Existing tax rate:				
Tax rate	$4.87	$0	$0	$0
Price	494	503	803	862
Production	5,788	1,0280	1,577	3,021
Imports			3	367
Exports			367	3
Consumption	5,788	1,0280	1,213	3,385
Sales (net)	$2,828		$1,267	
Tax revenue	31		0	
New tax rate:				
Tax rate	$13.82	$0	0	$0
Price	499	504	807	863
Production	5,652	1,0395	1,540	3,054
Imports			15	344
Exports			344	15
Consumption	5,652	1,0395	1,211	3,383
Sales (net)	$2,734		$1,244	
Tax revenue	$86		$0	
Percentage changes:				
Price	1	0.2	0.5	0.2
Production	—2	1	—2	1
Imports			421	—6
Exports			—6	421
Consumption	—2	1	—0.2	—0.1
Sales decrease	$95		$23	
Tax revenues increase	55		0	

Note: Quantities are in thousands of metric tons (2204.6 lbs), and prices are in dollars per metric ton. Tax rates are entered in dollars per English ton (2000 lbs.) and converted to dollars per metric ton for use in the model. Sales and tax revenues are in millions of dollars.

This table shows the effects of the tax rate proposed by H.R. 5640 ($13.82) on production, imports, and exports of propylene and polyprupylene, compared with the existing tax rate.

Attachment 1-B

EXHIBIT C.4—OUTPUT OF THE PETROCHEMICAL TRADE MODEL

	Benzene		Styrene	
	United States	Rest of world	United States	Rest of world
Existing tax rate:				
Tax Rate	$4.87	$0	$0	$0
Price	460	460	648	716
Production	3,571	1,445	2,893	4,884
Imports	448	28	12	465
Exports	28	448	465	12
Consumption	3,991	11,025	2,440	5,337
Sales (net)	$1,624		$1,873	
Tax revenue	19		0	
New tax rate:				
Tax rate	$14.88	$0	$0	$0
Price	469	461	657	717
Production	3,518	11,561	2,790	4,975
Imports	351	20	54	413
Exports	20	351	413	54
Consumption	3,849	11,230	2,430	5,335
Sales (net)	$1,592		$1,832	
Tax revenue	58		0	

Attachment 1-B—Continued

EXHIBIT C.4B.—OUTPUT OF THE PETROCHEMICAL TRADE MODEL

	Benzene		Styrene	
	United States	Rest of world	United States	Rest of world
Percentage changes:				
Price	2	0.2	1	0.1
Production	—1	1	—4	2
Imports	—22	—27	347	—11
Exports	—27	—22	—11	347
Consumption	—4	2	—0.4	—0.04
Sales decrease	$32	....	$41	....
Tax revenue increase	39	....	0	....

Note: Quantities are in thousands of metric tons (2204.6 lbs), and prices are in dollars per metric ton. Tax rates are entered in dollars per English ton (2000 lbs.) and converted to dollars per metric ton for use in the model. Sales and tax revenues are in millions of dollars.

This table shows the effects of the tax rate proposed by H.R. 5640 ($14.88) on production, imports, and exports of benzene and styrene, compared with the existing tax rate.

Attachment 2

Many arguments are made against expanding the Superfund feedstock tax because of the negative impact doing so would have on companies currently contributing through that tax. The following table lists the tax rate from 1981 through 1983 for the companies now paying approximately 70% of the petrochemical feedstock tax.

Company	Tax rate 1981-83, percent	Profit 1981-83, billions
Amoco	16.8	$5.5
Arco	18.7	7.3
Dow Chemical	—28.7	.776
Exxon (Chemical)[1]	27.5	9.4
Gulf	10.7	2.5
Mobil	13.1	3.1
Sun	16.8	2.96
Shell	26.7	8.1
Texaco	—3.4	1.7
Union Carbide	—11.4	.613
Dupont/Conoco[2]	—5.1	2.6

[1] Tax rate and profit figures are for Exxon Corp. as a whole.

[2] Tax rate and profit figures are for Dupont, of which Conoco is now a subsidiary.

Source for tax rate and profit data: "Corporate Income Taxes in the Reagan Years," Citizens for Tax Justice, October 1984.

STATEMENT OF MARTHA BROAD, RESOURCE SPECIALIST, NATURAL RESOURCES DEFENSE COUNCIL, INC.

Ms. **Broad**. My name is Martha Broad and I am a resource specialist with the Natural Resources Defense Council.

We are a nonprofit environmental organization working to protect human health and the environment from the hazards posed by toxic substances and to the air, the land, and the water. And we appreciate the opportunity to share our views today.

This committee must soon make some critical decisions regarding how much funding the Nation's hazardous waste cleanup program will receive, who must pay, and through what taxing mechanism these funds must be delivered.

The funding of the program is, in effect, the horse that pulls the Superfund cart and a high level of funding from a stable, predictable source can enable the program to move forward quickly and efficiently. It is our position that the Superfund Program should be enlarged to at least $11.7 billion over the next 5 years. As has been mentioned already, EPA, GAO, and OTA have recently estimated that the problem is quite large and that at least $11.7 billion will be needed to address the NPL sites that we expect to address over the next 5 years.

The current feedstock tax currently generates 87.5 percent of the cleanup fund and has thus far proven reliable and easily administered. A number of proposals in the House and Senate reduce in varying degrees our reliance on the feedstock tax and add a waste-end tax on the generation, treatment, storage, or disposal of waste. The Natural Resources Defense Council has in the past expressed its concern that a waste-end tax may pose a number of problems.

According to EPA's 301 Report, no model exists to precisely estimate waste generators' potential response to attacks on the generation of hazardous waste—that is, the actual reduction in waste production, even though such a model does exist in relation to a feedstock tax. In addition, no model has ever been developed to predict the ability of a waste-end tax to achieve its revenue target. However, despite the complexities of devising a workable taxing scheme, the lack of necessary data and the record of shortcomings in existing State waste-end tax systems, if Congress does decide to enact some form of a waste-end tax, to support the Superfund, we strongly urge that:

One, a flat tax on the various disposal methods be implemented, rather than a degree of hazard tax. And that whatever flat tax is adopted, it does not encourage underground injection of waste.

Two, that no more than 10 percent of revenues be derived from a waste-end tax.

And three, that wet weight rather than dry weight be used as the unit of taxation under a waste-end taxing scheme.

NRDC strongly opposes adoption of waste-end proposals which incorporate a degree of hazard tax, which taxes some disposal methods at a lower rate than others. Taxing underground injection at a lower rate, as has been proposed in both the House and the Senate, would be ill-advised at this time, for several reasons:

One, considerable uncertainty surrounds the potential for injecting hazardous wastes and their ability to be adequately isolated in the subsurface strata into which they are injected and are intended to remain.

Two, considerable quantities of hazardous wastes are already being disposed by this method. Approximately 60 percent of all wastes disposed is injected annually.

Three, it is far less tightly regulated than any other hazardous waste disposal method and as a consequence far cheaper.

Four, some waste streams are likely to be shifted from one inadequate land disposal method to another instead of being treated and rendered nonhazardous or being destroyed in an environmentally safe fashion. And this behavior undermines what seems to be the principal goal of the waste-end tax, which is to encourage proper management of our wastes.

Therefore, we recommend that if a waste-end tax is adopted that it be based on a flat tax scheme that does not attempt to differentiate between disposal methods based on their degree of hazard.

Let me also mention that we also recommend that if a waste-end tax is adopted that wet weight rather than dry weight be used as the unit of taxation. As the EPA has found, a dry weight may be more difficult to administer than a wet-weight tax and, moreover, it is less reliable and it provides the opportunity for waste manipulation for the purposes of tax reduction or avoidance. In addition, a dry-weight taxing mechanism is likely to have adverse environmental effects by further encouraging underground injection, a disposal method which, as noted previously, involves serious unanswered questions about future damage to ground water.

Thank you.

Mr. ANTHONY. Ms. Broad, thank you very much for your testimony.

[The prepared statement follows:]

STATEMENT OF MARTHA BROAD, RESOURCE SPECIALIST, NATURAL RESOURCES DEFENSE COUNCIL, INC.

This testimony is presented on behalf of the Natural Resources Defense Council, Inc. (NRDC), a non-profit environmental organization with over 45,000 members working to protect human health and the environment from the hazards posed by toxic substances released into the air, land and water. We appreciate this opportunity to present our views on the reauthorization of the Comprehensive Environmental Response, Compensation and Liability Act ("Superfund"), particularly with regard to funding mechanisms.

Reauthorization of Superfund, the hazardous waste site cleanup law, is one of NRDC's top priorities this year, and we look forward to working with Congress towards strengthened legislation in the coming months. Of principal concern is that the Superfund program receive adequate funds generated using a reliable funding mechanism. These are the tools with which Superfund is to achieve its primary goal, that of responding to the need for clean up at the thousands of sites that presently or may in the future blight our environment and threaten public health. Any proposals that could compromise an adequate and fully reliable funding base should not be seriously considered.

THE SUPERFUND PROGRAM SHOULD BE ENLARGED TO AT LEAST $11.7 BILLION OVER THE NEXT FIVE YEARS

In four and a half years, EPA has spent almost $1.6 billion to clean up only six sites. It is clear that a much larger Superfund is required to effectively address the hundreds of sites on the Agency's proposed National Priorities List (NPL).

Last December, EPA issued the "301 Report," mandated by Congress. According to the Agency's own estimates, an $11.7 billion Superfund will be needed to address a list of 1,800 NPL sites.[1] More recent estimates go much higher. The General Accounting Office (GAO) now estimates that the number of priority sites could grow to over 4,000 and that the federal cleanup costs could go as high as $39.1 billion.[2] The Office of Technology Assessment (OTA) recently released a study which points out that it could take EPA decades to clean up 10,000 possible priority sites at a cost of $100 billion.[3]

In light of these estimates, a substantial increase over present funding levels is mandatory. We urge that at least $11.7 billion, as estimated by EPA, be allocated to finance cleanup over the next five years.

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[1] "Section 301(a)(1) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980: A Report to Congress on the Environmental Protection Agency's Experience with Implementing Superfund," U.S. EPA, December 1984, p. 7. Hereinafter cited as "301 Report."

[2] Testimony of Milton J. Socolar, Special Assistant to the Comptroller General, before the Subcommittee on Commerce, Transportation, and Tourism of the House Committee on Energy and Commerce, March 7, 1985.

[3] "Superfund Strategy: Summary," Joel S. Hirschhorn, Projec Director, Office of Technology Assessment, March 1985, OTA-ITE-253.

THE SUPERFUND PROGRAM MUST RAISE BOTH A PREDICTABLE AND A RELIABLE AMOUNT OF MONEY

A tax on the "feedstocks," or raw materials used in chemical production, currently generates 87.5% of the cleanup fund. This tax has thus far proven a reliable source of funding, and is easily administered. Moreover, it places the financial burden on those industries that produce the vast majority of substances being found at Superfund sites. A number of proposals in the House and the Senate reduce, in varying degrees, our reliance on the feedstock tax, and add a "waste-end" tax on the generation, treatment, storage or disposal of waste. NRDC has in the past expressed its concern that a waste-end tax is an unreliable mechanism for generating the revenues necessary to finance Superfund cleanup efforts. The experience of states utilizing waste-end taxes, as documented by the GAO[4] and an EPA study,[5] demonstrates that waste-end taxes are difficult to administer, do not generate the revenues anticipated, have not been shown to obtain the objective of encouraging alternative disposal practices, and may in fact increase the incentive to illegally dispose.

Moreover, establishing a waste-end tax poses a number of problems. One, no model exists to precisely estimate waste generators' potential response to a tax on the generation of hazardous waste, such as exists to predict changes in prices and levels of feedstocks resulting from a feedstock tax.[6] Two, no model has been developed to predict ability of waste-end tax to achieve its revenue target.[7] For either of these models to be developed and yield reliable information, more data needs to be generated on the production and decision-making process that affect the supply of and demand for various products; the sensitivity and elasticity of demand for final products to changes in the prices conditioned by a waste-end tax; the extent to which a waste-end tax would fall on the same industries as the feedstock tax; and the degree to which a waste-end tax would create incentives to reduce overall volume of waste generated.[8]

The financing mechanism in the present law has worked well to generate a reliable income stream to support Superfund cleanup activities. By all estimates, the cleanup task ahead is so great that a dependable source of funding is an absolute necessity. Faced with the prospect of many expensive cleanup operations during the next several years, waste-end proposals that threaten a less than fully reliable funding base should not even be seriously considered at this time. We are also concerned that proposals for complicated changes to the Internal Revenue Code at a time when our entire tax system is being reconsidered could result in a slowing of the reauthorization process precisely when the need for rapid Congressional action is most pressing. This Congress should instead move expeditiously to reauthorize the proven and dependable funding mechanism created in 1980 so that EPA and the states can proceed with the job.

If, despite the complexities of devising a workable taxing scheme, the lack of necessary data, and the record of shortcomings in existing state waste-end tax systems, Congress decides to enact some form of a waste-end tax to support the Superfund, we strongly urge that:

(1) a flat tax on the various disposal methods rather than a degree-of-hazard tax be adopted at this time which does not encourage underground injection of wastes;

(2) no more than 10% of revenues be derived from a waste-end tax; and

(3) wet weight rather than dry weight be used as the unit of taxation under a waste-end taxing scheme.

According to EPA, a waste-end tax could be established today that did not attempt to differentiate between disposal methods according to the "degree-of-hazard" they are predicted to pose, but instead applied a flat tax on all disposal methods.[9] The Agency believes that the data derived from the recent survey on hazardous waste generators and treatment, storage and disposal facilities provides an adequate basis for establishing a flat tax. Additional data, however, are required to support the development and implementation of an incentive-based degree-of-hazard tax.[10]

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[4] General Accounting Office, State Experience With Taxes on Generators or Disposers of Hazardous Wastes, GAO/RCED-84-146, May 4, 1984.

[5] U.S. Environmental Protection Agency, A Survey of State Experiences With Waste End Taxes, Office of Policy Analysis, Washington, D.C., September 1984. Hereinafter cited as "State Superfund Report."

[6] *301 Report* at 5-21.

[7] *Id.* at 5-28.

[8] *Id.* at 5-22, 37, 38.

[9] *301 Report.* at 5-56.

[10] Westat, Inc., *Final Report, National Survey of Hazardous Waste Generators and Treatment, Storage, and Disposal Facilities Regulated Under RCRA in 1981.* Prepared for U.S. Environmental Protection Agency, Office of Solid Waste, Washington, D.C., 1984.

NRDC strongly opposes adoption of a degree-of-hazard taxing scheme. At present, in the absence of necessary but unavailable supporting documentation, such an approach could have unintended adverse results. By assigning lower tax rates to certain disposal methods, such as underground injection, the impression that these are better disposal methods is advanced, even though no such comparative risk analysis has ever been undertaken. As a consequence, some waste streams are likely to be shifted from one inadequate land disposal method to another, instead of being treated and rendered non-hazardous or being destroyed in an environmentally safe fashion. This behavior undermines what seems to be the principal goal of the waste-end tax which is to encourage the proper management of our wastes. In this connection we would also note our continuing belief that it is more prudent public policy to create incentives for behavior changes through the organic provisions of RCRA and CERCLA rather than to attempt to raise the standard of conduct of disposers through an inherently complex and difficult to administer taxing scheme. The Superfund tax should provide reliable and adequate funds for all cleanup response actions. Schemes that work against this effort undermine the principal function of the Fund.

NRDC would also like to emphasize that taxing underground injection at a lower rate, as has been proposed in both the House and the Senate, would be ill-advised at this time for several reasons: (1) considerable uncertainty surrounds the potential for injected hazardous wastes to be adequately isolated in the subsurface strata into which they were injected and intended to remain; (2) considerable quantities of hazardous waste are already being disposed by this method; and (3) it is far less tightly regulated than any other hazardous waste disposal method, and as a consequence far cheaper.

NRDC therefore recommends that if a waste-end tax is adopted that it be based on a flat tax scheme that does not attempt to differentiate between disposal methods based on their degree-of-hazard. According to Agency analysis, the flat tax scheme shows some promise in being able to generate reliable revenues.

We also urge that, if adopted at all, a waste-end tax should not be relied on for more than a small portion of the total revenues intended to be generated. No more than 10% of revenues should be derived using a waste-end tax and the remainder should come from the more reliable and proven feedstock tax.

Finally, NRDC urges that wet weight rather than dry weight be used as the unit of taxation under the waste-end taxing structure. As an EPA study found, dry weight may be more difficult than wet weight to administer as a unit of taxation.[11] Moreover, it is less reliable and provides the opportunity for waste manipulation for the purposes of tax reduction or avoidance. In addition, a dry-weight taxing mechanism is likely to have adverse environmental effects by further encouraging underground injection, a disposal method which, as noted previously, involves serious unanswered questions about future damage to groundwater. Specifically: [12]

(1) Dry weight would have to be defined as either the non-water weight of the waste or its solid content. A solids content tax basis would make many highly mobile solvents tax exempt, whereas a nonwater definition would require fairly sophisticated waste analyses to determine the non-water portion of the waste.

(2) Wastes could be mixed together or diluted with water to reduce tax liability, and IRS or EPA could not verify taxes owed. Such incentives to dilute exist when there are high differential tax rates among disposal methods and especially when wastes are put into an underground injection well and cannot be sampled.

(3) Mistakes in calculating dry-weight could contribute to significant revenue losses.

(4) The dry-weight of a waste could vary significantly from shipment to shipment, requiring frequent waste sampling and analysis to calculate the proper tax liability.

(5) EPA currently has no standard procedure for testing for dry-weight, whereas they do for wet-weight. A wet-weight tax would eliminate need to develop and implement testing protocols for dry-weight which could have to be incorporated in implementing regulations.

Wet-weight, on the other hand, is a common tested measure, frequently used by waste management facilities to maintain records and report information to EPA. Consequently, using a wet-weight ton basis would reduce or eliminate a number of factors that could contribute to errors in calculating the tax. There is no good reason at this time to establish a system so complex, prone to difficulties, and vulnerable to abuse that it is likely to be ineffective for any purpose of CERCLA.

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[11] Pope-Reid Associates, "Effects of Changing the CERCLA Tax Basin," prepared for Office of Policy Analysis, U.S. Environmental Protection Agency, December 1983.

[12] *301 Report* at 5–73, 74.

CONCLUSION

In recognition of the great need for a significant-sized and reliable income stream to support Superfund cleanup activities, NRDC urges Congress to reauthorize CERCLA with a minimum of $11.7 billion over the next five years, and with an effective and predictable funding mechanism. To this end, we would discourage the adoption of an unproven and unreliable waste-end taxing scheme to finance, even in part, the cleanup efforts. If, however, Congress intends to adopt a waste-end approach, no more than 10% of total revenues should be expected from such a scheme, a flat tax on the various disposal methods rather than a degree-of-hazard should be imposed and wet weight rather than dry weight should be the unit of taxation used.

STATEMENT OF LESLIE DACH, ASSOCIATE DIRECTOR FOR ENERGY AND ENVIRONMENT, NATIONAL AUDUBON SOCIETY

Mr. DACH. Thank you, Mr. Chairman, and I thank you for the opportunity to appear here today.

My name is Leslie Dach and I am with the National Audubon Society. The Audubon Society actively supports H.R. 2022 introduced in early April by Representative Gerry Sikorski. If enacted into law, H.R. 2022 would, among other things, raise and spend $11.7 billion over 5 years for cleanup and other Superfund programs.

This $11.7 billion funding level will simply allow EPA to continue its current pace of expansion in its cleanup efforts and fund other essential new Superfund programs, like increased health assessments and tougher cleanup standards.

The Sikorski bill will also repeal the petroleum exemption, finally putting the Superfund to work cleaning up leaking underground storage tanks and would repeal the Post Closure Liability Fund—the fund in the current law that creates incentives for dangerous hazardous waste management and shifts the ultimate and high-cost of cleanup to the Federal Government.

I would like to focus in my oral testimony on those two subjects today.

As mentioned, the National Audubon Society strongly supports the repeal of the Post Closure Liability Fund which is included in the current Superfund law. The current law establishes a $200 million Post Closure Liability Fund by taxing operating hazardous waste disposal facilities. Taxation is on a dry-weight basis, and is stopped whenever the fund reaches a $200 million level. This fund was enacted in 1980 without any serious debate or discussion and was not included in the House passed version of Superfund.

Under this fund, beginning 5 years after a land facility closes, the owner and operator of that facility is relieved of all responsibility for the costs of cleanup and personal and property damages. Beginning 30 years after the land disposal facility closes the Post Closure Liability Fund relieves the owner and operator of all responsibility for routine monitoring and maintenance costs. The owner and operator is relieved of all responsibility, regardless of whether or not they have the financial resources to pay for the problems that they caused.

We believe that the Post Closure Liability Fund should be repealed for the following reasons:

It relieves all facilities of all liabilities after 5 years, even if the owner/operator of that facility is still in the hazardous waste business and is still solvent and can pay for the trouble that it has caused. We see no reason to create a Federal bailout for solvent companies.

Second, the blanket transfer of liability from the owner or operator of a hazardous waste facility to the Federal Government eliminates important incentives to manage hazardous waste in the most environmentally accepted manner, and indeed, creates incentives for practices that will last just through the 5-year monitoring period.

There are so many problems with EPA's current regulations governing the closure of hazardous waste facilities that proper closure does not protect public health. In addition there is no way under the current law to challenge EPA's decision to allow a facility to shift its liability to the Federal Government no matter how poorly that facility operates after the 5-year monitoring period. So if a facility begins to leak like a sieve in the sixth year, the Federal Government and the taxpayer would still pay the total tab.

Third, a $200 million fund is simply not enough to cover the costs that are likely to be caused by qualifying facilities. The Federal Government will be left holding the bag for the real cost of the cleanup and the victim, no matter how damaged, will have no where to go at that time for help.

Fourth, the Post Closure Liability Fund is plagued by the so called Social Security dilemma in that over time the number of fee payers into the fund will decline drastically. The number of sites for which the fund is responsible, can only increase.

Fifth, the concern that large numbers of owners or operators will disappear after closure, leaving the Government and the victim high and dry is unfounded. The owners and operators of land disposal facilities are primarily very large corporations which are not likely to disappear, or become insolvent.

Finally, under Superfund the courts have applied strict, joint, and several liability to owners and operators of closed hazardous waste facilities, yet the supporters of the Post Closure Liability Fund would like to relieve the owners and operators of present day facilities from their liability.

I would like to quickly now turn to the issue of leaking underground storage tanks. The Audubon Society strongly supports Mr. Downey's bill to remove the petroleum exemption from the current Superfund so that Superfund moneys and legal authorities can be used to protect the public from leaking underground storage tanks containing petroleum.

Petroleum contamination of ground water has been documented in communities throughout the country and according to EPA figures cited last year during Congressional debate on this subject, there are approximately 75,000 to 100,000 leaking underground storage tanks in this country as of today and that number will increase over time. The availability of Superfund money for cleanup is only one part of Superfund that must be available to deal with the leaking underground storage tank problem, and other provisions of Superfund relating to liability, health assessments etcetera are also critical for guaranteeing proper cleanups.

That completes my oral testimony and I would be happy to answer any questions that you might have.

Mr. **Dorgan** [presiding]. Thank you for your testimony.

Your full statement will be made a part of the record.
[The prepared statement follows:]

STATEMENT OF LESLIE DACH, ASSOCIATE DIRECTOR FOR ENERGY AND ENVIRONMENT, NATIONAL AUDUBON SOCIETY

Mr. Chairman, members of the committee, thank you very much for the opportunity to appear here today. My name is Leslie Dach. I am the Associate Director for Energy and the Environment at the National Audubon Society. The Society has over half a million members organized into more than 500 chapters nationwide. Audubon has been actively involved in the legislative and regulatory aspects of Superfund since 1979.

The National Audubon Society actively supports H.R. 2022, introduced by Representative Sikorski and cosponsored by over 40 other members. H.R. 2022 is supported by the environmental community, major labor unions, and citizen groups. If enacted into law H.R. 2022 would:

raise 11.7 billion dollars over five years for cleanup and other Superfund programs. This sum is raised through a combination of general revenues, feedstock taxes and a new waste end tax on the disposal of hazardous waste. Lest the country believe that this sum is too much, or even that it will solve the problem, let me add that EPA estimates indicate that $11.7 billion would clean up only 1,800 sites. Thousands of other sites in thousands of other communities would not receive federal assistance under an $11.7 billion superfund. For example, the states estimate that 7,000 sites need federal assistance. The GAO has put the number at 4,000 and the OTA at 10,000.

repeal the petroleum exemption, putting Superfund to work cleaning up leaking underground storage tanks.

establish a pilot demonstration program to provide people whose health has been damaged by hazardous waste with necessary medical services. This program is limited to a small number of communities selected by EPA and structurally identical to provisions passed by the Senate Environment Committee.

respond to the tragedy in Bhopal, India by giving U.S. communities the right to know about the dangerous chemical processing activities occurring in their midst. Currently, citizens and local emergency response authorities are often kept ignorant of basic facts affecting their health and safety.

repeal the post closure liability fund. This fund creates incentives for dangerous waste management and shifts the cost of cleaning up leaking dumps to the federal government. (The post closure liability fund is discussed in greater detail later in this testimony.)

establish national, uniform legal procedures for victims of hazardous substances. This federal cause of action enables victims to use Superfund to sue those responsible for damages.

put EPA on a strict but realistic schedule to increase the pace of cleanup. EPA has so far completed cleanup at only a handful of the thousands of sites needing attention. The Sikorski schedule will guarantee that EPA cleans up more sites faster in more communities around the country.

require permanent cleanup where feasible and establish uniform national cleanup standards. The Sikorski standards will eliminate short term, short-sighted and ultimately uneconomical cleanups.

increase community participation in the Superfund process to foster better cleanups and improve community relations.

The National Audubon Society strongly opposes the Superfund bill introduced by the Administration. The Administration bill does not meet the needs of the American public for a strong Superfund. If enacted into law, the Administration bill would:

raise only 4.5 billion dollars in taxes over 5 years to pay for Superfund clean up and other related programs. (The Administration's $5.3 billion estimate for its Superfund bill includes $300 million raised in the sixth year and $500 million in interest and fines.) The National Governor's Association called the Administration proposed funding levels "totally inadequate."

threaten the integrity of the Superfund tax base. Superfund is currently financed through a tax on basic chemical feedstocks which has proven itself to be a highly reliable source of income. The Administration proposes to shift 60% of the Superfund tax base to an untried and unproven waste end tax scheme that may encourage midnight dumping and which may be difficult to enforce.

significantly slow down the pace of cleanup by dramatically increasing the amount of money a state must contribute before Superfund cleanups can begin. The state share of cleanup costs at privately owned sites would double from 10 to 20 percent under the Administration's bill. The state share for state operated sites would increase from a minimum of 50 to 75 percent. Many states have been unable to meet even their current Superfund obligations in a timely manner.

weaken current law by threatening communities now protected by Superfund. The Administration's proposal prohibits Superfund from being used to address certain classes of life-threatening hazardous substances releases (unless the President has determined that a major emergency exists, and that no other person has the capability to respond to the emergency). Many sites now proposed for Superfund action would be denied federal assistance and sites not yet proposed would be ineligible for the basic studies needed to determine Superfund eligibility.

For example, EPA could not routinely clean up poisoned drinking water supplies unless the contamination was known to be caused by a facility that handled hazardous substances. Water supplies currently proposed for inclusion on the National Priority List would be removed from Superfund's jurisdiction, including water supplies in New York, California, Michigan, Minnesota, Nebraska, New Jersey, and North Carolina. EPA would be precluded from funding the studies needed to determine if other contaminated water supplies should be cleaned up. Also, EPA would also not be able to routinely clean up public health threats caused by the extraction and processing of ores and minerals.

legalize substandard cleanup. The Administration's proposal allows EPA cleanups to violate public health standards and criteria established under other relevant environmental laws for any reasons promulgated by the agency in its National Contingency Plan. The National Contingency Plan now being proposed sanctions inadequate cleanups by allowing unnecessarily broad waivers for applicable standards.

fail to provide adequate health assessments at communities threatened by hazardous substances releases. The Administration bill does not require EPA to initiate health assessments of exposed communities no matter how serious the threat.

fail to compel the cleanup of dumps owned by the federal government.

fail to put EPA on a schedule to speed cleanup.

fail to clean up communities threatened by the release of petroleum products from leaking underground storage tanks.

fail to provide citizens with access to the courts to require EPA to carry out its duties under Superfund.

fail to provide appropriate relief to victims of hazardous substance releases including failing to establish a federal cause of action.

We also oppose the Superfund bill introduced by Representative Moore. The Moore bill fails to adequately fund Superfund, leaving thousands of communities and their residents at risk from toxic chemicals. The Moore bill would also aggravate the nation's deficit by raising one-third of its income from general revenues. Finally, the waste end tax in the Moore bill could create economic incentives for hazardous land disposal techniques.

FUNDING LEVELS

The National Audubon Society supports a Superfund level of $11.7 billion over five years. This represents an increase of $1.5 billion from the bill passed overwhelmingly by the House last session—at this Committee's recommendation.

Since last year the estimates of the size and cost of the Superfund problem have greatly increased. EPA now says it will cost the Superfund $22 billion to clean up 2,500 of the nation's worst dumps. The General Accounting Office projected that 4,000 sites will need federal attention at a cost of $40 billion. The Office of Technology Assessment puts the number of sites needing federal assistance at 10,000 and the cost of cleanup at $100 billion. The state governments have indicated that at least 7,000 sites will need to be cleaned up.

Even these cost estimates are likely to be low because they do not include the increased costs of Superfund programs that the Congress has indicated should be an essential part of toxic cleanup. For example, the House last year added requirements to the current law for improved health assessment and toxicological profiles, spelled out baseline cleanup standards, and shifted some of the cost of cleanup and maintenance from the states to the federal government.

According to EPA, $11.7 billion will clean up only 1,800 dump sites. Thus, even the funding levels in the Sikorski bill will leave thousands of dumps in thousands of communities unattended for decades—all the while continuing the leak their poisons into our environment.

Turning to the question of how to raise the Superfund revenues, the Audubon Society supports the feedstock levels in the Sikorski bill. They are equitable and economically sound. The feedstock tax demonstrates a very high relationship between the taxed product and hazardous materials. It dovetails closely with the principle that the polluters should pay for the problems they have caused. No study we have seen bears out the threats of plant closures and job losses that the petrochemical industry says will befall it. As all of you know, the history of environmental legislation is marked by predictions of brownouts, blackouts and plant closures that are not borne out by fact.

Much has been written and said in support of funding the majority of Superfund by some sort of broad-based tax. These proposals raise a number of serious concerns. First, they represent a massive deviation from the "polluter pays" principle. The petrochemical companies argue that the feedstock tax is inequitable because it does not create a close enough relationship between the cause and the problem. Clearly, this argument is far more to the point regarding a broad-based tax. Second, many of the proposals for a broad-based tax raise administrative problems. For example, the value added tax recommended by some on the Senate side could require tax collection from an unworkably large number of taxpayers.

As you know, the Sikorski bill contains a waste end tax system which raises $300 billion a year for four years. The Audubon Society would oppose any waste end tax scheme that raised more than that amount per year. The Sikorski bill raises about 10% of its total revenues from a waste end tax. We feel that represents an appropriate distribution between feedstock and waste end taxes.

Any waste end tax included in Superfund should also meet the following criteria:

It should tax all forms of land disposal including waste placed in impoundments in wastewater treatment plants. These impoundments are not safe. During the wastewater treatment process, waste can leak from these impoundments. The House recognized the threat from wastewater treatment impoundments when it passed strengthening amendments to the Resource Conservation and Recovery Act in the last session of Congress. In requiring that currently operating impoundments be retrofitted to meet basic environmental standards, the House did not exempt wastewater treatment impoundments. (The Senate and the conference report did ultimately exempt certain wastewater impoundments from retrofitting.)

It should rely on a wet weight, not a dry weight tax. The underground injection community is lobbying heavily in favor of a dry weight tax. The dry weight tax has overwhelming administrative and public health problems. No agreed upon techniques for assessing the dry weight of a solution exists. Enforcement of a dry weight measurement is very difficult. It would require a mechanism to guarantee the correctness of millions of measurements. The post closure liability fund in the current Superfund raises its money on a dry weight basis and tax collection has been a disaster. Only a small fraction of the taxes that were projected have been collected. The underground injection industry is incorrect when it argues that injection is safer than other forms of land disposal because of the aqueous nature of its waste. Indeed, solutions of waste can be much more dangerous than solids. Solutions leak more easily and can travel through soil to groundwater faster. It is also misleading to argue that a 3% solution is safe because it is such a low concentration of hazardous substances. A 3% solution of waste equals a concentration of 30,000 parts per million. EPA standards for safe levels of carcinogenic substances are often between .001 and 1 part per million.

It should tax all forms of land disposal equally. Underground injection of hazardous waste should not be the beneficiary of any economic incentives.

The National Audubon Society does support the development of an appropriate import tax that would remove any unfair economic advantage from imported chemicals.

POST CLOSURE LIABILITY FUND

The National Audubon Society supports repeal of the post closure liability fund (PCLF) in the current Superfund.

THE CURRENT LAW

The current Superfund establishes a $200 million Post Closure Liability Fund by taxing operating hazardous waste disposal facilities. The taxes are assessed at a rate of $2.13 per dry weight ton of waste. Taxation is stopped whenever the fund reaches the $200 million cap. The fund was enacted without any serious debate or discussion, and was not included in the House-passed version of Superfund in 1980.

Beginning five years after the facility closes, the PCLF relieves the owner and operator of all responsibility for the costs of cleanup and personal or property damages. Beginning thirty years after the disposal site closes, the fund relieves the owner and operator of all responsibility for routine monitoring and maintenance costs. The owner or operator is relieved of all responsibility whether or not they have the financial resources to pay for the problems they caused.

The PCLF covers any facility that receives a final permit from EPA, is properly closed and is monitored for a maximum period of five years to demonstrate that "no substantial likelihood that any migration offsite or release from confinement . . . will occur." The PCLF was included in the current Superfund at the urging of the hazardous waste management industry.

In 1980, the hazardous waste management industry justified the PCLF on two grounds. First, it argued that it was necessary to allay community fears about hazardous waste siting. Second, it argued that the PCLF was necessary to enable the hazardous waste management business to raise capital. Neither of these rationales has been documented. First, experience at hazardous waste sites indicates that the problems addressed by the PCLF are not a significant part of the siting dilemma. Second, hazardous waste management has been and will continue to be a growth industry with or without a PCLF.

REASONS FOR REPEAL

The PCLF should be repealed for the following reasons:

The PCLF relieves all facilities of all liability after five years, even if the owner or operator of that facility is still in business. There is no reason to bail out solvent companies.

The transfer of liability from the owner/operator of a hazardous waste facility (even if that facility is closed according to EPA's regulations) eliminates important incentives to manage hazardous waste in the most environmentally acceptable manner and creates incentives for practices that will last just through the five year monitoring period. There are so many problems with EPA's regulations governing the closure of hazardous waste facilities that "proper closure" does not protect public health.

A $200 million fund is simply not enough to cover the costs of cleaning up the problems that may be caused by qualifying facilities. The federal government will be left holding the bag for the real cost of cleanup.

The PCLF uses well-managed land disposal facilities to subsidize the worst land disposal sites, because both disposal sites pay the same tax regardless of the potential for problems.

The PCLF is plagued by the so-called "Social Security Dilemma". Over time, the number of PCLF fee payers will decline (drastically if EPA does its job on the land disposal restrictions of RCRA), but the number of sites for which the PCLF is responsible can only increase.

The responsibility of EPA to certify sites so they can qualify for the PCLF is likely to be delegated to authorized states since they will supervise the closure of the facility. Thus, the states and the owner/operator will be approving the transfer of liability to a federal fund. Those picking up the tab will play a minor role in determining which facilities qualify.

The PCLF covers liability for waste sites and impoundments. These facilities can and should be completely cleaned up at closure, eliminating post closure problems.

The PCLF is not necessary for long term monitoring and maintenance costs. This is because the present value of money required to pay for such expenditures 50 to 100 years from now is very small, and the expenditures are fairly predictable. Thus, the marginal cost of requiring financial assurances for perpetual monitoring and maintenance, rather than for thirty years, is not significant.

The concern that large numbers of owner/operators will disappear after closure leaving the government and the victim high and dry—is unfounded. The owner/operators of land disposal facilities are primarily very large corporations which are not likely to disappear or become insolvent.

Under Superfund, the courts have applied strict, joint and several liability to owner and operators of closed hazardous waste facilities. Yet, supporters of the PCLF want to relieve the owners and operators of present day facilities from liability.

LEAKING UNDERGROUND STORAGE TANKS

The Audubon Society supports Mr. Downey's bill to remove the petroleum exemption from the current Superfund so that Superfund monies and legal authorities can be used to protect the public from leaking underground storage tanks (LUST) containing petroleum. We salute Mr. Downey for his leadership in this area.

The current Superfund precludes the use of any Superfund money or legal authorities at LUST sites, no matter how serious the public health threat. The petroleum exemption in the current law is the result of power politics not rational public policy. The exemption should be repealed.

Petroleum contamination of groundwater has been documented in communities throughout the country. According to EPA figures cited during Congressional consideration of RCRA amendments concerning LUST, there are approximately 2 million underground storage tanks containing gasoline. Between 75,000 and 100,000 of those tanks were thought to be leaking. Industry trade journals have suggested that as many as 350,000 tanks will be leaking during the next several years.

The vast majority of underground gasoline storage tanks have been made of unprotected steel, which offers little protection from corrosion. Experts predict the lifespan of such tanks at about 15 years. According to EPA's figures, about 1 million unprotected tanks are more than 16 years old. (To their credit many gasoline station owners and operators have recognized the dangers as well as lost profits occassioned by leaking tanks and have embarked on programs to retrofit their tanks.) Congress recognized the danger of LUST by passing amendments to RCRA to create federal regulation of LUST.

Even small leaks of gasoline into groundwater can cause serious groundwater contamination. According to EPA, "one gallon of gasoline per day is enough to pollute the water of a fifty-thousand-person community." Tanks are leaking all across the country. EPA has commented, "gasoline may be one of the commonest causes of groundwater pollution in many parts of the country." Surveys and incidents in individual states such as New York confirm this alarming national picture.

The availability of Superfund money for cleanup is only one part of Superfund that should be available for the LUST problems. Other provisions of Superfund are critical for guaranteeing proper cleanups and redress of damages. People whose homes or drinking water have been poisoned by petroleum deserve the same protection as people whose homes have been poisoned by other chemicals. They need strong baseline cleanup standards and a system to assess health risks from exposure. They deserve the same rational legal procedures for pursuing damage claims, and the ability to use citizen suits to protect their communities from government or industry behavior. Most importantly, the same legal principles of strict, joint, and several liability that apply to other hazardous substances within Superfund's jurisdiction (which includes other pure products besides gasoline) should apply to leaking petroleum. Only strict, joint, and several liability creates the appropriate incentives for voluntary cleanup.

We oppose the suggestion of the oil industry that a separate fund be set up to clean up leaking underground storage tanks. This suggestion is a transparent effort to escape the provisions of Superfund which are necessary to protect the public from such a threat.

Thank you for the opportunity to testify today.

Mr. **Dorgan**. Mr. Schulze, do you have any questions of the panel?

Mr. **Schulze**. None, thank you.

Mr. **Dorgan**. Thank you.

I would like to ask a question of all of the members of the panel.

I notice particularly, Ms. Broad, in your testimony that you had a statement about waste-end proposals and you are suggesting that because the size of this problem is so significant, that it is imperative that we come up with a stable revenue source which we can rely on over a period of time to fund the efforts necessary to cleanup the problem.

And in your statement, on page 4, you suggest waste-end proposals which threaten a less than fully reliable funding base, quote unquote, should not even be seriously considered.

Can you embellish on that statement and tell me what you mean by that?

Ms. **Broad**. Certainly.

It is our position that the feedstock is a proven source and that it can, once again, fund the program at a high level and that State waste-end schemes, although they are portrayed by some people as rosy and successful, in fact, have not brought in the full amount of revenue that they were expected to and there are a number of questions that have yet to be worked out for a waste-end scheme to be implemented on a Federal level.

And specifically a waste-end scheme which differentiates and could promote underground injection.

Mr. DORGAN. Mr. Dach, and Mr. Early, can you comment on her position on that?

Mr. EARLY. Well, we all basically agree with that position. It would be appropriate to have a waste-end tax as long as it remained a small source of income, essentially an experimental tax to see to what extent it is workable.

And as long as it did not promote things like deep-well injection, which we think have the potential of creating underground Superfund sites, in the future, if used as a greatly stimulated source of disposal technique on a broader basis.

Mr. DORGAN. Well, let me just say that the reason that some members on the committee, including myself, feel that we ought to take a look at waste-end tax sources is that we understand that this problem is a very substantial problem, and is going to require a substantial amount of revenue. Using only a feedstock tax puts enormous burdens on that source of revenue. If we are able to develop a revenue base that is broader than that one and contains characteristics which spread the burden, then consideration of a waste-end tax would make sense to me especially as there are different views of the State experience with waste-end taxes and some are more optimistic and rosier projections than you have just given us.

Mr. DACH. Let me just say one thing.

Mr. DORGAN. Go ahead.

Mr. DACH. As I mentioned, we are supporting the waste-end tax which is included in Mr. Sikorski's vehicle which does raise about $300 million a year. Other members of the House, for example, Representative Schneider and Wyden have introduced waste-end taxes of their own and we think, frankly, that neither the package in the Sikorski nor the Wyden/Schneider bill is yet perfected. But we have not expressed any opposition to the inclusion of a waste-end tax at the percentage funding level that is in Mr. Sikorski's bill.

Mr. DORGAN. Let me ask just one other question of the panelists.

If you were to start with a clean slate today, without any source of revenue but with an understanding that we have a significant problem and must spend significant amounts of money to try to resolve it, what kind of revenue base would you develop?

Mr. DACH. I think that our general feeling is that the feedstock tax that we have in existence now is an equitable and fair tax that does bear, perhaps the strongest relation between the polluter and the problem of any of the taxes that have been brought forward to date. And it is our general feeling that that tax should provide the backbone for the Superfund and that it should be raised up to the point where it causes undue economic hardship. Clearly there is disagreement where that level may be, but in our mind, the first step is to take the feedstocks and to expand it to the point where the level of crying ouch, is indeed, a real one and then go beyond that by looking at waste-end tax schemes. It is our feeling that looking at the numbers that we have seen that the combination of some general revenues, feedstocks and a small waste-end tax can bring us up to the funding level that we feel is appropriate to deal with the problem.

Mr. DORGAN. OK.

Ms. Broad.

Ms. BROAD. I would just add that any waste-end tax which has a number of environmental unknowns and questions is something that my organization does not support.

Mr. DORGAN. All right, but do you agree with Mr. Dach who implied that there is a point at which excessive reliance on a feedstock only produces undesirable results.

Would you agree with that?

Ms. BROAD. I think that there can certainly be a point where industry, as Mr. Dach termed it, may be crying ouch and it may be real pain.

Mr. DORGAN. Except that that point is very difficult to determine.

Ms. BROAD. It is difficult to determine.

Mr. DORGAN. Mr. Early.

Mr. EARLY. I am in general agreement. I think that it is important to realize that 70 to 80 percent of the waste generated in this country is generated by the petrochemical industry so that in a general sense, they are a large portion of the problem and they ought to be a large portion of the solution to the problem.

And that is why we have continued to defend the feedstock tax and we think that there is a rough equity there and that when you start looking at other schemes you quickly bog down in a lot of complexities, which you do not have to deal with in the feedstock tax.

Mr. DORGAN. I appreciate all of your responses. The only point that I want to make is that a feedstock tax, which is legitimate to raise a lower level of necessary revenue, is a different kind of tax than a feedstock tax that would be used to try and fund a massive cleanup effort by which we would try to raise $11 billion.

So some of us are searching for ways to see if we cannot broaden that base on the revenue side and I appreciate your comments and the testimony that all three of you have given today.

Mr. DACH. Thank you, Mr. Chairman.

Mr. EARLY. Thank you, Mr. Chairman.

Ms. BROAD. Thank you, very much.

Mr. DORGAN. The next panel today is the Washington Conference for Zinc, Mr. Bauer.

Mr. Carlstrom, the St. Joe Minerals Corp. John Paul, American Mining Congress. Ed Merrigan, National Association of Recycling Industries.

If you gentlemen would come forward we can begin.

Mr. GILMAN. Mr. Chairman, I would just like to take a moment to introduce my good constituent, Mr. Bauer, who is very learned and very competent in his field and has been a manufacturer of renown in our own area, and I welcome the opportunity to join him. I am not here to testify but to be supportive.

Thank you.

Mr. **Dorgan**. Well, I welcome my colleague and I apologize for not seeing him at the end of the table.

Thank you very much for coming and introducing Mr. Bauer to us.

Mr. Bauer, you may proceed.

STATEMENT OF R.J. BAUER, PRESIDENT OF EASTERN ALLOYS, MAYBROOK, NY, AND CHAIRMAN, WASHINGTON CONFERENCE FOR ZINC

Mr. **Bauer**. Thank you, Mr. Chairman.

The Washington Conference for Zinc is testifying today to respectfully request that the Ways and Means Committee exclude zinc from the Superfund taxing formula. Zinc is a critical and versatile mineral ranking fourth in industrial metal consumption following iron, aluminum, copper.

Zinc industry operations consist of mining, smelting, alloying, die casting, brass and bronze production, galvanizing and zinc dust production.

The U.S. zinc industry provides employment to an estimated 40,000 Americans and results in hundreds of consumer items ranging from eyeglass frames to computer parts, auto tires, and vitamins. Attached to my testimony is a partial list of some of the other consumer products which contain zinc.

With the committee's permission, I would ask that the list be submitted to the record.

The Washington Conference for Zinc firmly believes that the inclusion of zinc as a hazardous substance in any Superfund tax, including a feedstock tax, or a waste-end tax, would have grave consequences on the zinc industry with repercussions felt in many consumer product industries.

Zinc is not a toxic substance. It should not be categorized with those materials which pose a chronic health hazard at Superfund sites. The zinc industry is not a contributor to the Superfund problem and it should not be held responsible for the funding of a hazard waste cleanup.

Last year, the Washington Conference for Zinc, testified before this committee on the effects that the feedstock tax would have on the domestic zinc industry. The conference talked about the effects that a tax of a penny a pound would have on the zinc industry's ability to remain competitive.

Circumstances of the industry have not changed appreciably since we last appeared before you, except that the price structure has weakened and the imposition of a tax zinc would be even more burdensome.

Closely related to the economic disadvantage that a tax on zinc would create is a marketing disadvantage that would be created if zinc is put under the hazardous toxic substance umbrella of the Superfund. If zinc is declared hazardous and toxic in the Superfund reauthorization, consumers will not be ready to buy products containing zinc. One wonders if people would be willing to buy eyeglass frames made with zinc, if it were considered toxic under the Superfund.

In January of this year, the Washington Conference for Zinc commissioned a report on the toxicity of zinc and its effects on health and the environment from Dr. Robert I. Henkin. He is one of the foremost authorities on zinc. And Dr. Henkin's credentials are impressive. And he is currently the director for the Center for Molecular Nutrition and Sensory Disorders at Georgetown University Medical Center and he was chairman of the National Academy of Sciences Panel to study the effects of zinc on our environment.

The Panel's published work is used extensively by the EPA. Dr. Henkin has produced a balanced report that examines all aspects of zinc in the environment and its effect on human health. The Henkin report states that zinc is not a toxic metal. It is shown not to be carcinogenic, teratogenic, or mutagenic. Dr. Henkin informs us that zinc is the fourth most common element in the human brain and is a component of DNA. The U.S. Department of Agriculture has established a minimum requirement for zinc of 15 milligrams a day. This amount is needed by all of us in order to maintain good health. Dr. Henkin reports that 4 million Americans suffer from zinc deficiency which manifests itself by symptoms such as altered taste and smell, impaired appetite, skin lesions, and even loss of fertility.

The Henkin report concludes that without zinc human life is not possible. Dr. Henkin also takes issue with the criteria that the House of Representatives and the EPA have used in the past in criticizing zinc's effect on the environment.

With the committee's permission, I would like to introduce Dr. Henkin's report into the record, along with the list of his extensive credentials.

In 1980, zinc, except for two specific compounds was excluded from the Superfund tax. And in fact, Congress has never included zinc in any environmental law on the basis of its effects on human health. The Washington Conference for Zinc respectfully asks this committee to maintain its practice and to continue to exclude zinc from any Superfund reauthorization.

Thank you for the opportunity to present this testimony.

Mr. DORGAN. Thank you, very much for your testimony.

[Attachments to the prepared statement follow:]

CONSUMER PRODUCTS CONTAINING ZINC

Washers and dryers; Electric ranges; Microwave ovens; dishwasher; floor polisher; blender; slicer; lamps and spotlights; fans; automatic and hand mixers; can opener; clocks; peppermills; intercom; furniture; door handles; jewelry; bathroom accessories and hardware; record players; locks; cameras; slide projectors; microscopes; toys; clarinet; drums; audio speakers; portable TV; telephone sets; high fidelity microphones; paint; lawn mower; grass sheers; lawn sprinkler; microscopes; marine engine blocks; electric plane; mandrel; boring jig; cutter and grinder; tap and reamer wrench; paint spray air compressor; flanges; flexible ruler housing; electric drill attachments; plane iron; chisel sharpner; tubing brush; Theodolite (telescope); x-ray meter; frames; moldings; binclings; glacier points; tube shields; nails; washers; gaskets; stencils; templates; tags cable shieldings; embossing tape; electrical fuses; cavity wall ties; gutters; downspouts; flashing; termite shields; gravel stops; coping covers; roof seams; farm implements; alarms; parking meters; pumps; impellers; grommets; golf clubs; vending machines; hoists; wheel frames; motor frames; air clamps; switches; scales; file cabinets; registers; time recorders; copy machines; package sealers; printing dies; offset printers; dictating equipment; pencil sharpener; stapler; marking machine; grilles; gas engine components; lubricator; fractional HP motor; transformer housings; motor fans; windshield frame; door post assembly;

window channels; fuel pumps; carburetors; instrument panels; head and tail-light housings; hood ornaments; head and air conditioning outlets; side mirrors; door hardware; and steering wheel.

ZINC TOXICITY IN HUMANS

(By Dr. Robert I. Henkin, Director, Center for Molecular Nutrition and Sensory Disorders, Georgetown University Medical Center)

Zinc in the environment.—Zinc is a moderately abundant element with a concentration in the continental crust of the earth of 50–70 ppm which places it 24th in abundance among the chemical elements. There are more than 80 zinc minerals known but the principal commercial ones are few, mainly sulfides, sphalerite and wurzite (cubic and hexagonal ZnS) and their weathering products, primarily carbonates and oxides.

Normal soils contain 10–300 ppm zinc, soils near major highways contain more zinc probably as a result of zinc deposited from wearing of tires (from zinc oxide) and emissions from motor oil to which zinc dithiophosphite has been added. In these areas at a distance of 8 meters from a major road zinc on the soil surface can reach 170 ppm and in the same areas, at a depth of 15 cm, the concentration can be as high as 72 ppm.

Zinc is a very active substance and is commonly found in the presence of organic matter. Some of these zinc compounds are insoluble, some soluble. Soluble zinc-organic complexes can leach through soil to influence weathering and geochemical distribution. Some soluble zinc-organic complexes are so stable that the zinc is essentially unavailable to living systems although these extremely stable complexes are rare.

There are two main groups of organic compounds that form stable compounds with zinc in soil, one group involving organic acids, peptides, proteins and polysaccharides; the second, humic and fulvic acids. Most of the insoluble zinc-organic complexes are commonly associated with humic acid.

Zinc is also found in various bodies of waters. In seawater, zinc varies from 1–27 ppb (mediam 8 ppb, 8ug/L). About 700,000 metric tons of zinc are estimated to be transported to the sea annually with 99.9% of this total reaching the seas in the dissolved form and eventually precipitated with oceanic sediments, mainly clay minerals. Zinc content in fresh waters is more variable but a value of 10 ppb (10 ug/L) is a reasonable approximation High concentrations of zinc in surface waters reflect industrial and urban pollution from sources such as galvanized pipes and dumpings of plating baths. Streams from mining areas have contained as much as 21 mg/L (21,000 ppb). However, waters of such streams tend to purify themselves by precipitating zinc with clay sediments or with hydrous iron and manganese oxides. Such precipitation can affect 1,000–10,000 ppm (100,000 ppb) zinc which is sufficient to purify most contaminated streams.

Zinc is a component of coal varying from 7–300 ppm. With coal burning, zinc is released into the atmosphere and with precipitation it will be deposited in soil. Zinc in petroleum varies from 0.2–4 ppm.

In this sense there is a natural life cycle of zinc in soil, water and air. A natural equilibrium has been in existence from time immemorial by which zinc passes from one system to the other. The equilibrium of this natural environmental ecosystem is the major manner by which zinc is distributed in the environment. By and large, the equilibrium of this system favors the precipitation of zinc in the earth's crust.

Man-made zinc sources in the U.S.—There were about 30 mines and smelters in which zinc was produced in the U.S. in 1974. This number has decreased in recent years. Zinc is mined primarily as sphalerate, then crushed in mills and concentrated by differential floatation. Based upon 1973 figures the total zinc emissions to the atmosphere from all mining and smelting in the U.S. has been estimated at 43.5 metric tons, the total mined and milled being 435,318 metric tons. The amount of zinc released into the environment from mining compared to that from natural processes is trivial. In specific areas near zinc smelters, however, zinc in soils can be quite high; within 1 km of one smelter zinc in soil in the upper 15 cm was 50–80,000 ppm with organic matter containing as much as 135,000 ppm. The concentration of zinc falls off sharply as the distance from plants increase.

Smelting of zinc generally involves a roasting procedure which draws off sulfur dioxide (SO_2) and converts the zinc sulfide (ZnS) to zinc oxide (ZnO). Roasting can create large amounts of dust but because the operation is usually enclosed the dust can and is collected and disposed of. Particulate collecting devices, primarily bag houses and electrostatic precipitators, are highly efficient (>95%) in recovering zinc particulates. Some emission sources are uncontrolled, usually associated with concentrate unloading, handling and storage. Zinc can also be produced when other metals are refined, primarily lead, copper and steel. However, in each of these cases, as in the smelting of zinc itself, even if given off into the environment, zinc is confined to the limited areas near the smelters.

Recycled zinc is an important source of zinc in the U.S. Approximately 20% of the total U.S. zinc production is from these sources (zinc scrap). Airborne emissions from this source were estimated to range from 5 g–62 kg/metric tons of product.

One of the major zinc products in the U.S. is zinc oxide. In 1974, 228,356 metric tons of zinc oxide was produced in the U.S. approximately half that mined or milled.

In order to estimate zinc concentrations in an urban environment to assess air levels, air in several urban centers was sampled with yearly averages varying from <0.01–1.6 $\mu g/m^3$, the highest figure near Bridgeport, CT. Most zinc particulates in air are released as fall out from precipitation and have been measured as run off in several major metropolitan areas; average values were 0.34 kg/curb mile.

Zinc in sewage is another common zinc source. Primary effluents given in one study was 0.83 ppm and most values are less than 1.0 ppm. In digested sewage sludge zinc content ranged from 500–50,000 ppm.

These studies indicate that zinc is a persistent constituent of almost all effluents but its concentration is generally low except in limited local areas where it is mined or smelted or concentrated in digested sewage sludge.

Zinc in humans.—Zinc is an essential substance for humans. Without zinc, human life is not possible. Zinc is the fourth most common element (*not* trace element) in the human brain behind sodium, potassium and magnesium. It is a component of many key enzymes in several organ systems which are necessary for life; DNA polymerase and ribonuclease are both zinc dependent enzymes and without adequate stores of zinc protein synthesis cannot procede normally. Zinc is found in the human body most prevalently in muscle (65%) and in bone (25%) with about 5% in liver. Its primary function in either muscle or bone is still unknown.

Zinc is not synthesized in the body. It is an essential nutrient which can only be obtained through oral intake, absorption through the lungs being trivial except in very unusual circumstances. The U.S. government has fixed a recommended daily dietary allowance (RDA) for zinc in order to ensure the health of the U.S. population; this has been fixed for adults at 15 mg/day with slight increases for pregnant and nursing mothers and slight decreases for children and adolescents. Zinc absorption varies from 40–80% in normal subjects, is decreased with food intake to 10–30% and may vary with several disease states. Zinc deficiency, marginal or overt is a major medical problem in the U.S. with estimates of four million people suffering with this problem with diverse manifestations such as short stature, altered taste and smell function, impaired appetite, various skin lesions and infertility. Zinc has recently become one of the more common additives to vitamin and mineral preparations sold by drug companies, the amount varying on a daily basis, as a supplement, from 10–22 mg/day. As noted above, oral zinc intake can be decreased by addition of food, but also by specific components of foods including phytate and other fiber substances contained in bran.

These results indicate that humans cannot survive without the daily intake of adequate amount of zinc in the diet.

Zinc toxicity in humans.—Zinc is not very toxic in humans. There are sparse reports of accidental exposure to food or drink accidently contaminated with high levels of zinc which mainly result in the acute onset of gastrointestinal distress with nausea, vomiting and diarrhea. There are less well-documented reports of a more global effect of oral ingestion of large amounts of zinc associated with drowsiness, fatigue and headaches. In a few reports very large amounts of zinc were ingested by children who developed lethargy and, on occasion, coma, the specific relationship to zinc correlated with elevated blood zinc levels. Occasionally, in the past, hemodialysis using galvanized tanks has been associated with nausea, vomiting and fever, associated with elemented plasma and red blood cell zinc levels. Discontinuation of the use of galvanized tanks has caused this problem to disappear.

Metal fume fever is an acute disability of short duration that occurs when fumes are inhaled from metal heated to a temperature above its melting point. This disorder has been most commonly associated with the inhalation of zinc oxide fumes but it may occur following inhalation of fumes of other metals including magnesium, iron and copper. However, metal fume fever is most severe among brass workers, the symptoms more severe the higher the proportion of zinc. Clinical effects are rapid breathing, shivering with fever, profuse sweating, pain in the chest, and generalized weakness. Effects usually occur in "attacks" which last 24–48 hours and are accompanied by an increase in white blood cells. A second or further exposure to the metallic fumes within 48 hours of the first exposure usually produces little or no effect. However, if the second exposure occurs after 48 hours, an attack is likely; after daily exposure, workers do not become ill again, suggesting an "immunity" to the effect.

Recently in some studies oral intake of large amounts of zinc has been associated with decrease of serum copper concentration although more careful studies in humans suggest that copper balance is unaffected. Some studies have implicated the intake of large amounts of zinc with an increase in blood levels of low density lipoproteins (LDL) a substance associated with the propensity to increase the incidence of cardiovascular disease in humans.

Zinc in humans has not been shown to be carcinogenic, teratogenic or mutagenic. Zinc has been closely linked to cadmium and small amounts of cadmium may coexist in zinc sources. It is possible that some of the toxic effects attributed to zinc may relate, in part, to the effects of cadmium. In general, however, adverse effects of cadmium can be reduced by increasing zinc intake, a phenomenon studied extensively in animals.

Zinc toxicity as related to other recycled metals known to be toxic to humans.—It is well known that lead and copper can produce toxic effects in humans. However, the above discussion indicates that zinc is, in a general sense, a non-toxic metal; indeed, results in the U.S. suggest that marginal deficiency of the metal is relatively common, so much so that many drug companies have added zinc to their vitamin preparations as a dietary supplement.

However, the U.S. government has seen fit to label zinc as a toxic substance. The inclusion of this metal as a toxic substance was based upon an EPA study of the applicability of a Superfund tax to a specific metal industry based upon a set of five toxicity criteria used to select metals that "should be taxed."

These criteria are as follows and appear in the final report from the Office of Solid Waste and Emergency Response. U.S. EPA entitled "Impact of taxing copper, lead, zinc oxide, fertilizer, feedstocks, coal derived substances and recycled metal criteria, section 301(a)(1)(H/1) Studies":

(1) The raw material is hazardous in some form (e.g., raw material, intermediate, or final product):

(2) The raw material ishazardous if spilled;

(3) Hazardous waste is generated in the production of the raw material, its intermediate, or final products;

(4) Some form of the raw material is capable of increasing the hazard potential of other substances; and

(5) The raw material is produced in large amounts.

A metal needs to satisfy three of the five criteria to be considered eligible for Superfund taxation. "Three of the five metals that satisfied the taxable quantity and tax/price ratio criteria also satisfied at least three of the toxicity criteria: copper, lead, and zinc. Each of these metals was determined to satisfy the first, second, third and fifth criteria."

These criteria may not accurately reflect whether or not a metal is toxic and in this sense, cannot be considered as specific requirements by which toxicity can be determined. The criteria are quite general and ambiguous.

Criteria (5) relates to toxicity only if the raw material is produced in large quantities. There are many substances which are produced in large quantities which are not toxic, e.g., lumber, glass, paper, and there are also substances produced in very small quantities which are highly toxic and need to be controlled, e.g., botulism toxins produced in the improper preparation of some food samples, cyanide gas, some chlorinated hydrocarbons. Thus, this criterion is not definitive in describing a toxic raw or processed material.

Criteria (1) and (3) are redundant. In most, if not all cases, if criteria (1) were satisfied, criteria (3) would also be satisfied. In this sense for one problem two criteria are set up which increases the probability of obtaining a toxic effect whether or not one existed.

Analysis of the criteria indicate that there are only three "toxicity" criteria (1+3), (2) and (4), the fifth criteria unrelated to toxicity per se. To assume that satisfaction of three of five criteria is associated with toxicity assumes that each of these criteria are independent and that each is valid in describing toxic effects. Such is not the case. On the other hand, substances which are generally considered as non-toxic can conceivably be considered toxic using these criteria. For example, water or ordinary table salt could be considered hazardous since their use would satisfy three of the five criteria. Although this was obviously not the intent of the framers of this documents and, with the knowledge that some criteria were necessary upon which to establish a basis for toxicity, the criteria chosen leave much to be desired. They are not independent criteria but highly correlated. One criterion (5) does not directly relate to toxicity per se, at all. The establishment of the satisfaction of three of five criteria to define toxicity appears to be arbitrary with no definitive data given to support the concept that with three criteria "satisfied" toxicity could be clearly "established."

However, even considering these flawed criteria of 1-4 (5 cannot be seriously considered), zinc can at best satisfy only criteria (1) and (3), and since these are redundant, it can be considered to satisfy one major criteria, and this rather barely. Zinc is not very hazardous in any form although its ingestion can produce acute toxic effects and, in this sense, could be considered hazardous, satisfying (1) and with (1), (3) can be considered satisfied since zinc in several forms can produce acute toxic effects (although in several forms it is not toxic and it must be ingested in rather large quantities prior to the onset of any acute effects as noted above). The amount of zinc "spilled" by humans is, in reality, insignificant in relation to the large amount of zinc in the environmental eco-system which is naturally recycled from air to water to land. Criterion (4) is not applicable to zinc since ingestion of zinc is commonly protective, decreasing the hazard potential of other substances, particularly cadmium and possibly, in some special situations, copper. Thus, at best, criteria (1) and (3) can be considered to be satisfied and at that the term "toxic" may be considered misapplied since only acute, not chronic, effects are usually observed, a situation quite different from that for lead.

Based upon careful analysis of the effects of zinc in humans, efforts have been made to increase the daily zinc content rather than to lower it. Marginal or overt zinc deficiencies are common problems affecting many people in the U.S. producing disease and manifestations of impaired well being. Rather than consideration of zinc as a hazardous toxic substance, we may best be served in considering acceptable and economic ways to increase the content of zinc in the U.S. diet in order to obtain the maximum benefit from this vital trace element.

Mr. DORGAN. Mr. Carlstrom, you may proceed.

STATEMENT OF ROBERT E. CARLSTROM, JR., MANAGER OF LEGISLATIVE AFFAIRS, ST. JOE MINERALS CORP.

Mr. CARLSTROM. Thank you, Mr. Chairman.

Our purpose today is to recommend to the committee and the Congress that it seriously consider shifting the tax base for financing Superfund to a truly broad-based tax and a single tax system.

We think that the studies that have come out, the recent OTA study on the number of sites—and the long-term nature of the Superfund problem dictate the need for a very stable and long-term revenue base.

Also, we need to examine the nature of the problem. There has been much discussion about industry dumping here and dumping there, but the nature of the problem is one where the solutions of the past have become today's problem. Oftentimes the engineering and the technology that went into the design of these facilities have now been inadequate to the task. So by and large, the nature of the Superfund cleanup is not a malevolent one. It is really a function what we think of as state-of-the-art inadequacy and, in fact, one manifestation of that is the increasing number of municipal landfills which are now emerging as Superfund sites.

We think that, by and large, hazardous waste disposal is a national activity in this country. It is not merely a function of big business but also of small business and even of individuals in their households. Changing the oil in an auto and disposing of the waste oil is one example of that.

As you recall, last year in the debate on RCRA there was much to do about the small quantity hazardous waste generators. The debate there centered on whether or not to impose reporting and notice requirements on small quantity waste generators below 100 kilograms per month down to 25 kilograms per month. The Congress decided to impose it at the 100 kilograms per month recognizing that there were 250,000 plus small quantity generators below that threshold. That to me, and to us, is one indication of the broad range of hazardous waste disposal activity in this country.

And it is for that reason that we have come to the conclusion that the Superfund financing should be shifted to a single, national broad-based tax. Let me give you an example too, from the EPA list of responsible parties just to illustrate my point. This is taken from their November 9, 1984, Office of Waste Programs Enforcement List:

Adams Drugs, Alaska Marine & Trucking Co., Allen Jewelry, American Greetings Corp., American Hospital Supply Corp., Amtrak, Ashland Realty Development Corp., Auburn High School, Aurora National Bank, B & W Investment Co. and the list goes on and on. The Church of God, Chicago Title & Trust, city of Memphis, Nick's Auto Body & Radiation Works, Seaton Hall University and Seymour Fire Department.

Mr. Chairman, that illustrates very graphically, and there is a list of hundreds and hundreds of them in this EPA document, that hazardous waste disposal is, indeed, a national activity. It is clearly something that the National Geographic pointed to in its article in March 1985. Again, I think that what the press is telling us is that is very broad-based.

We need—and I think that it is very possible—to shift to a broad-base tax. We suggest about 7 criteria for that and we believe that they can be met:

First, a stable revenue base; second, it should avoid economic impacts and intrusions into the market place economies; third, it should not reduce the competitiveness of U.S. industry both large and small; fourth, it ought not to occasion the loss of jobs; fifth, it needs to pass "Gattmuster", in terms of dealing with imports and the equalization of trade; sixth, it should be simple to administer for both Treasury and the taxpayer; seventh, it should be based on the ability to pay. Based on that we have come to the conclusion that a surcharge on corporate income taxes paid is one example of a broad-based tax. It is very simple to administer and it can provide the needed revenue to finance the fund at whatever level is determined appropriate.

We think that the feedstock and the waste-end tax have failed this criteria. The feedstock tax is basically a very punitive tax. It attacks its own tax base by its very definition. It ignores the ability to pay of the taxpayer and the market economic conditions of the particular product involved.

There is a misconception that pass through is a matter of routine and automatic fact of life in industry. In the mining industry metals prices are largely determined as a function of the international market place. The feedstock tax tends to favor foreign manufacturers and fabricators. That is why we have had such debate this past year, and this year again, with the proponents of the feedstock that there is a need to tax derivative materials and fabricated products being imported. But the Treasury Department continues to say that is too tough to do and that it cannot look behind every product.

The feedstock tax essentially provides you with a very complex mire of scientific, technical and economic arguments about which product to tax. It puts you in the position of almost blind hope—that whatever new products are added to it, you are not going to exact some severe economic distortions.

We think that the waste-end tax, while it is indeed probably a well motivated notion, is an attempt to use the tax code to accomplish also what the Congress intended in passing the RCRA amendments of 1984, in terms of creating an incentive to reduce waste.

We also believe, that the waste-end tax attacks its own tax base and it is inherently limited to a small number of taxpayers. It is indifferent to the ability to pay and it is going to increase the cost of production. Moreover, it may frustrate the purpose of the 1984 RCRA amendments. Those amendments clearly——

Mr. DORGAN. I am sorry but I am going to have to interrupt you as we have about 3 minutes for the vote and I am going to have to run and vote.

We will take a very brief recess and then we will continue again.

[Whereupon a brief recess was taken.]

Mr. JACOBS [presiding]. The committee will come to order.

Mr. Carlstrom, you may resume your statement.

Mr. CARLSTROM. Thank you, Mr. Chairman.

In concluding my remarks on the waste end tax, we just think it's highly duplicative of what's being intended under the RCRA amendments, which EPA reports are going to cost $3.8 billion in the first year of implementation, and $600 million thereafter for industry in terms of compliance costs.

Consequently, we believe that the waste-end tax is essentially a double whammy and may frustrate the very purposes of the RCRA amendments of 1984 simply because of the added cost burden.

Also very briefly, polluters are paying in the sense of regulatory compliance costs and site liability. We would therefore recommend shifting to a broader base and the imposition of a surcharge on corporate income taxes paid. It's something that meets the criteria which I alluded to before. No company is going to be put out of business. It's based on ability to pay. There are no lost jobs. It's a stable revenue base. It's simple to administer. There are no definitional problems. It's impossible to cheat on the tax. There are no GATT questions related to that. And it takes advantage of whatever tax reforms are determined to be appropriate in this committee.

It simply adopts and rides the workings of this committee and the Congress from year to year in determining appropriate corporate levels of taxation.

Mr. Chairman, that concludes my statement.

[The prepared statement follows:]

STATEMENT OF ROBERT E. CARLSTROM, JR., MANAGER, LEGISLATIVE AFFAIRS, ST. JOE MINERALS CORP.

SUMMARY

St. Joe Minerals Corporation strongly urges the Committee to repeal the current feedstock tax, to reject the waste-end tax, and shift financing of the Superfund to a single broad-based industry neutral tax that bases the corporate taxpayers' liability on ability to pay. St. Joe recommends the imposition of a small surcharge on corpo-

rate income taxes paid as one such approach to providing a stable revenue base and one that will not result in market distortions and debilitating economic injury to the taxpayer.

The feedstock tax is fundamentally flawed and should be abandoned because—

It is punitive in that it attacks its own tax base, ignoring the ability of the taxpayer to pay, the taxed product's competitive market conditions and the ability to pass on the tax.

It inequitably taxes only a small number of companies because they produce certain chemicals and metals—a "strict liability" manufacturer's tax—even though virtually all businesses and industries have used, profited and benefited from the production of these substances.

It creates an artificial incentive to substitute untaxed substances for taxed substances.

It places U.S. fabricated goods manufacturers consuming Superfund taxed commodities at a competitive disadvantage to imported fabricated goods which are not taxed.

If expanded or increased, it will create economic distortions in the minerals industry because of its inability to pass along the tax to its customers. The result will be a further weakening of the economic viability of the domestic minerals industry which, in turn, will reduce capital formation, jeopardize U.S. production of strategic minerals, potentially force the closure of marginal operations and discourage U.S. investment.

The waste-end tax should be rejected because it——

Ignores the economic condition of the taxpayer and the inherent differences in volume and toxicity between various industry wastes.

Uses the tax system to duplicate the intent of the 1984 RCRA amendments and becomes a second financial "whammy" on the RCRA-regulated industries, diverting substantial monies needed to finance compliance with the new RCRA requirements.

Gives an unfair competitive advantage to foreign producers who would not face the same added costs of production.

Is reliant on a diminishing revenue base that will fail to provide the long-term, stable funding needed for Superfund.

Provides an additional incentive for illicit disposal and concealment to avoid the tax, as well as RCRA regulation.

Polluters already pay—

To comply with increasingly stringent regulation under RCRA, Clean Air Act, and Clean Water Act, among others.

As responsible parties at Superfund sites.

Many polluters don't pay—

Over 250,000 small quantity hazardous waste generators (under 100 kg) are exempt from any RCRA regulation while more municipal landfills and commercial waste management businesses servicing these generators are continuing to be declared Superfund sites.

A broad-based, industry neutral tax based on ability to pay—a surcharge on corporate income taxes paid—should be adopted because it—

Provides a stable and predictable revenue base—that upon which the Federal budget is in part based;

Avoids economic distortions in individual industry markets;

Is simple and easy to administer;

Avoids GATT problems yet taxes foreign U.S. taxpayers and profits derived from imports;

Avoids making companies worse off in periods when losses are incurred, and in good years relates their funding burden to their level of profitability;

Is neutral to tax reform—simply riding congressional action from year to year on corporate income tax liability; and

Constitutes a clear recognition that hazardous waste disposal is a "national activity" involving all sectors of business.

STATEMENT

Mr. Chairman and Members of the Senate Finance Committee:

I am Robert E. Carlstrom, Jr., Manager-Legislative Affairs St. Joe Minerals Corporation. St. Joe is a diversified natural resources company and was acquired by Fluor Corporation in 1981. St. Joe is the largest U.S. integrated producer of lead and zinc and is a major coal and iron ore producer. In addition, St. Joe has lead, zinc and gold operations in Latin America.

St. Joe, as a responsible member of the mining industry, supports the goal of cleaning up abandoned hazardous waste sites to a level that is safe for the public health and supports the Superfund concept as a mechanism to achieve that end. We also recognize the need for a long-term Superfund program and believe that this Committee and the Congress should adopt a new broad-based taxing mechanism in order to finance the program. In this connection, we believe that both the current feedstock tax and the proposals to establish a national waste-end tax are fundamentally flawed, are punitive, will not produce the revenues needed to finance the program and will, if expanded, increased, or imposed (as the case may be), reduce the economic health of affected industries. Consequently we believe the current feedstock tax should be repealed, that the waste-end tax proposals should not be adopted, and that Congress should adopt a broad-based, industry-neutral tax in which liability is commensurate with the ability to pay. As one such approach, we are recommending a small surcharge on Federal corporate income taxes paid.

WHAT'S WRONG WITH THE FEEDSTOCK TAX

The feedstock tax approach purports to establish a connection between those substances taxed and the substances causing problems at Superfund cleanup sites—the "polluter pays" principle. While the "polluter pays" principle may be appropriate in connection with Federal, State and local regulatory programs to provide cleaner air and water, and to manage and treat hazardous wastes, such as last year's RCRA amendments, it has no relevance at Superfund sites consisting in whole or in part of wastes generated by businesses that no longer exist or cannot be identified. We believe that imposing a tax on existing manufacturers of chemicals and metals to pay the cleanup costs at sites where the responsible parties cannot be identified is a perverse application of the doctrine of strict liability—that is, the manufacturer of a particular substance is made liable to pay a tax on that product for the disposal practices of others manufacturing the product in a previous era. This approach also ignores the fact that all existing manufacturers which are identified with particular waste sites will be liable to pay for the cleanup of those sites. Therefore, the burden of raising funds to clean up truly orphaned sites should be spread more broadly throughout the industrial community.

The feedstock tax is punitive in that it attacks its own tax base by ignoring the taxpayers' economic situation and the products' market conditions.

The feedstock tax is inequitable—some substances get taxed, others do not, even though virtually all businesses have used, profited and benefited from the production of these substances.

A feedstock tax cannot avoid creating economic distortions in the marketplace. It increases the cost of the taxed product and, thus, gives an advantage to those competing products which are not taxed. For example, under last year's House-passed bill, zinc—an essential trace metal—would have been taxed, while aluminum—equally non-toxic—would not have been taxed. The two metals compete for certain industrial uses such as die casting, and the House bill would have artificially created an economic incentive to substitute aluminum for zinc.

U.S. fabricated goods manufacturers incorporating Superfund-taxed substances in their products would be at a competitive disadvantage to identical imported fabricated goods which are not taxed. This result could be avoided by imposing a tax on imported fabricated goods containing a taxable substance, but this, according to the Treasury Department, would be an administratively impossible task and could create some conflicts with U.S. obligations under GATT. This is an example of the enormous complexities inherent in relying on feedstock taxes which are avoided under our proposed alternative—a surcharge on Federal corporate income taxes.

For the domestic mining industry, which has yet to recover from one of the deepest and longest recessions in its history, there is no guarantee that feedstock taxes can be passed on to our customers. When the market is weak, there will be intense pressure on U.S. producers to absorb the tax which will further exacerbate the problem of already declining profitability when the market is depressed. The inability of the minerals industry to pass along the feedstock tax to its customers will have the following additional effects:

Decrease the economic viability of companies engaged in metals and mining and lessen the capital available for modernization and expansion.

Shift the thrust of exploration activities and mineral development offshore, causing increased U.S. import dependence on metals and strategic materials, reduced domestic mineral industry employment and greater trade deficits.

Cause certain marginal operations to become permanently unprofitable, forcing closures and loss of jobs.

Inhibit domestic investment in new manufacturing operations which utilize taxable raw materials and favor foreign investments.

In sum, we think that the use of feedstock tax to finance the Superfund is fraught with inequities and threatens the economic viability of many basic domestic industries and particularly the domestic minerals industry.

THE WASTE-END TAX SHOULD BE REJECTED

We strongly urge that Congress not adopt a so-called waste-end tax for the following reasons:

A waste-end tax ignores the economic condition of the taxpayer and the inherent differences in volume and toxicity of wastes as they may vary from industry to industry and facility to facility.

It ignores the 98th Congress' passage of very stringent hazardous waste control legislation (RCRA) which is clearly intended to discourage the land disposal of hazardous waste by imposing substantial new costs upon the regulated industries in the form of more stringent performance and design standards—a regulatory framework under which the polluter is already paying and under which the polluter will pay substantially more in order to continue operations and production.

It is an attempt to use the tax system to accomplish the intent of RCRA and, when coupled with the added new RCRA costs, it becomes a second financial "whammy" on the RCRA-regulated industries, because they must now both finance the additional costs of regulatory compliance and at the same time pay a tax on those waste streams which they are trying to minimize.

It increases the costs of domestic producers, giving a further competitive advantage to foreign producers and importers who would not be similarly taxed.

Because hazardous waste generation will likely decline under RCRA, it fails to provide the long-term and stable revenue base needed for the Superfund. (States' experiences with waste-end taxes have not generated originally anticipated revenues in many cases, as well as proving difficult to administer and enforce.)

EPA's waste-end tax proposal is especially onerous as EPA could levy additional taxes by simply redefining what constitutes a hazardous waste.

Waste-end taxes provide an additional incentive for illicit disposal or concealment to avoid the tax—similar to conclusions drawn in the February 22, 1985 GAO Report: "Illegal Disposal of Hazardous Waste: Difficult to Detect and Deter"—which concluded that "additional regulatory measures may increase deterrence but may not detect the determined violator."

A combination of feedstock and waste-end taxes, plus an additional broad-based tax mechanism, would result in three separate national tax systems to raise revenue for a single Federal fund—resulting in a substantial increase in Federal administrative costs (for example, more Treasury and EPA personnel for auditing, collection and other administrative support). Moreover, many businesses could end up paying a tax under each tax system.

LET'S RE-EXAMINE THE "POLLUTER PAY" PRINCIPLE

The feedstock and waste-end taxes are two variations of this concept. The feedstock tax is aimed at certain products that may be inherently hazardous or are the result of industrial processes that may result in some hazardous wastes. The waste-end tax is aimed at both creating an incentive to reduce hazardous waste generation and imposing a tax on those wastes that may later become a part of Superfund site. However, neither tax—alone or in combination—will ensure that all polluters pay.

We believe, therefore, that the "polluter pay" idea needs to be examined more broadly along the following lines:

Polluters already pay and will continue to pay more in order to comply with environmental standards and requirements under such statutes as RCRA, the Clean Water Act, the Clean Air Act, among others. There is now in place a broad polluter pay regulatory framework under Federal, State, and local law—and one that is getting more stringent each year.

At Superfund sites, responsible parties are liable to pay for the cleanup costs occasioned by their wastes, irrespective of any wrongdoing—again, the polluter is paying.

When the 98th Congress debated the RCRA amendments, a major area of controversy centered upon the threshhold for imposing recordkeeping and reporting requirements on what are known as "small quantity generators." Congress debated whether the regulatory threshhold should be 25 kg/month or 100 kg/month and ultimately agreed to 100 kg/month, because over 250,000 more small quantity hazardous waste generators would be subject to such requirements if lowered to 25 kg/month.

Municipal landfills are occupying positions on the NPL in increasing numbers—each receiving wastes from thousands of businesses and individual waste generators. The commercial waste disposal facilities which have been listed for Superfund cleanup have received in some cases wastes from scores to hundreds of businesses—large and small—which paid them to dispose of the wastes. Under Superfund, those customer companies will pay again because of the improper or inadequate action of the facility.

We believe that these factors clearly and undeniably demonstrate that the generation and disposal of hazardous wastes is a national activity involving all sectors of the economy. As such, we believe the Superfund tax should be shared broadly and even-handedly among all businesses in a manner that respects the taxpayers' ability to pay thus avoiding the economic and market distortions in industry that could result from either an increase or expansion of the feedstock tax or the imposition of the waste-end tax.

PROPOSED FINANCING ALTERNATIVE—TAX ON CORPORATE INCOME TAXES PAID

We believe it is time for Congress to abandon the feedstock tax, reject a waste-end tax as means of financing Superfund and adopt a broader based approach that would more equitably distribute Superfund costs throughout the industrial sector, eliminate the inherently punitive nature of feedstock and waste-end taxes, avoid economic distortions in the marketplace and bear a relationship to a company's ability to pay.

Specifically, we strongly recommend that this Committee consider an alternative approach to taxation, one in which business and industry as a whole would pay a small surcharge based on Federal corporate income taxes paid. Such an approach recognizes that businesses and industries of all kinds both (1) have benefited from industrial development which has created the problems that Superfund is intended to remedy and (2) have been involved, to some degree, in either the manufacture, sale, use or disposal of hazardous wastes.

As mentioned earlier, Superfund sites are in no way limited to smokestack industry plant sites. They also include public waste management facilities and the "high tech" industry wastes, such as those in "Silicon Valley". Virtually every business or industrial organization creates and disposes of wastes in some way—either on site, in small quantities destined for handling by commercial or public refuse collection services or in large quantities destined for disposal in waste management facilities. Waste generation and disposal is, therefore, pervasive in American business. Our proposal recognizes this fact and provides a mechanism for the business community to share in an equitable manner in "footing the bill" to pay for the cleanup of wastes at sites which cannot be attributed to particular parties.

Under the surcharge approach, the Superfund tax could be shared by the over 2.8 million businesses which file corporate income tax returns and pay Federal corporate income taxes.

Such a broad-based approach:

Provides a more predictable tax base than the feedstock or waste-end tax approaches—the same one upon which the Federal budget is based—thus, guaranteeing adequate and reliable financing of the Fund;

Avoids economic distortions in individual industry markets and the creation of artificial incentives to substitute untaxed substances for taxed substances in manufactured goods;

Avoids the complexities involved in fairly taxing imported products that themselves are taxable chemicals or which contain taxable chemicals;

Avoids any potential GATT problems, and yet those foreign corporations having a U.S. income tax liability would pay, as well as those who derive income from foreign imported goods.

Ensures that struggling companies will not be made worse off in years when they are unable to pay—that is, when they incur losses and do not have to pay Federal corporate income taxes;

Simplifies Treasury administration of the Superfund tax and avoids, or at least minimizes, the need for more resources in the Internal Revenue Service and Customs to collect the tax. The tax liability line on IRS Form 1120—"U.S. Corporation Income Tax Return"—provides the sole basis for determining and calculating Superfund surcharge liability.

CRITICISMS OF THE SURCHARGE

In the course of our discussions with others in industry and business, as well as Legislative and Executive branch staff, several concerns or objections to a surcharge on corporate income taxes have been raised:

Criticism No. 1: *Many industrial and business sectors are not polluters and, therefore, should not pay a Superfund tax.* We believe, as stated earlier, that all businesses have benefited from lower cost products and materials as a result of the less costly waste management practices of the past, as well as through substantial investment or other fiduciary relationships with industry. Moreover, virtually all companies use, sell or dispose of potentially hazardous products in some way and to varying degrees. The orphaned site cleanup problem cannot be equitably and accurately attributed to a small or narrow industrial grouping. It is a problem whose solution must be financed over a broader base. Consequently, business in America should join collectively in financing a Fund to pay for those orphaned site cleanup costs that cannot be attributed to particular parties.

Criticism No. 2: *Small business will be injured by yet another tax.* We don't believe this is the case. Even the smallest business, if the Superfund surcharge rate is set at one percent, would pay only $1 per $100 of Federal corporate income tax liability. A small business paying $10,000 in taxes would pay a Superfund surcharge of only $100. Based on OMB projections of corporate income tax receipts, a 1% surcharge would raise over $5 billion in the 1986–90 period. Moreover, by definition, any business would pay only when it has the ability to pay, that is, when it is profitable and incurs a Federal income tax liability.

Criticism No. 3: *Profitable polluters who pay no corporate income taxes would not pay a Superfund tax.* First, ensuring that profitable corporations pay a tax is on the agenda of this Committee and the Congress. The proposed Superfund surcharge simply rides the integrity of the tax code and is neutral on the tax reform debate because such issues are more appropriately dealt with in the context of revisions to the general tax code. If tax reform results in more corporations paying income taxes, then Superfund revenue will either increase automatically or Congress will be in a position to reduce the Superfund surcharge to avoid "over funding" EPA's program. Second, it is not accurate to say that some of these corporations are polluters who do not pay. They may not pay the surcharge in a given year, but they already pay, and will pay increasingly more, in order to achieve and maintain compliance with Federal environmental regulatory programs such as RCRA. Moreover, if such a company is in fact a responsible party at a Superfund site, the company will pay the costs of cleanup.

Criticism No. 4: *The existing feedstock tax is easy to administer because only a handful of companies pay.* This criticism indicts itself because the Superfund sites have clearly been created by more than a few companies. Moreover, ease of administration in the context of taxing only a few companies is not a legitimate basis on which to perpetuate an inequitable and punitive tax that ignores economic impact, market distortions and ability to pay.

Criticism No. 5: *It is too late to change the method of tax.* We believe that this is the time to switch to a simplified, broad-based approach that is capable of providing a stable, long-term revenue base and which avoids the impacts of more costly and complex feedstock and waste-end taxes.

Criticism No. 6: *A waste-end tax creates an incentive to reduce waste generation.* We believe a waste-end tax will encourage more illegal dumping or concealment and will be costly to administer. Moreover, the recent RCRA amendments, as well as the Clean Water Act, provide adequate and more appropriate vehicles by which to create incentives to reduce the current discharge of wastes into the environment. Finally, we do not believe that it is an appropriate use of the Government's taxing authority to attempt to tax a problem out of existence, nor do we believe such an approach can be successful.

CONCLUSION

A Superfund surcharge will equitably and effectively meet the financing needs of the Superfund—without the complexity and economic repercussions associated with feedstock and waste-end tax approaches. While we believe the broadest possible base for the imposition of the proposed Superfund surcharge is most desirable, we have developed a number of alternative options which would exclude certain categories of corporate taxpayers. These are illustrated in the attached materials. The options presented illustrate the revenue generating capacity of even very low surcharge rates and show the rates which would apply under various funding levels. We do not mean, however, by these illustrations to endorse any particular funding level or the exclusion of certain taxpayers.

In conclusion, we urge this Committee to seriously consider this approach as one which can, in a very simple way, ensure a solvent Superfund financed in an equitable and broad-based manner.

March 18, 1985

SUPERFUND SURCHARGE PROPOSAL

PREMISE: Tax corporations at a rate that avoids economic dislocations and bears a relationship to a company's ability to pay.

PROPOSAL: Impose a surcharge on Federal corporate income taxes due (IRS Form 1120, line 31). Use surcharge as sole funding mechanism.

WHO PAYS: Only those corporations (see options below) actually paying Federal income taxes in a given tax year.

ESTIMATED CORPORATE TAX RECEIPTS ($$ in billions)

	1986-1990
Total Corporate Income Tax Receipts (OMB)	$541.8

Option I: All corporate taxpayers

	1986-1990		
Raise from industry ($$ in billions)	$5	$7.5	$10
Applicable surcharge	.92%	1.38%	1.85%

Option II: All corporations having gross receipts over $10 million (81% of total taxes paid).*

	1986-1990		
Raise from industry ($$ in billions)	$5	$7.5	$10
Applicable surcharge	1.14%	1.71%	2.28%

Option III: All corporations having gross receipts over $50 million (66% of total taxes paid).*

	1986-1990		
Raise from industry ($$ in billions)	$5	$7.5	$10
Applicable surcharge	1.40%	2.10%	2.80%

Option IV: Only "industrial" corporations (agriculture, mining, manufacturing, construction, and transportation and utilities); excluded are wholesale and retail trade, finance, insurance, real estate, and services (67% of total taxes paid).*

	1986-1990		
Raise from industry ($$ in billions)	$5	$7.5	$10
Applicable surcharge	1.38%	2.07%	2.75%

Option V: Only those "industrial" corporations having gross receipts over $10 million (63% of total taxes paid).*

	1986-1990		
Raise from industry ($$ in billions)	$5	$7.5	$10
Applicable surcharge	1.46%	2.20%	2.93%

Option VI: Only those "industrial" corporations having gross receipts over $50 million (53% of total taxes paid).*

	1986-1990		
Raise from industry ($$ in billions)	$5	$7.5	$10
Applicable surcharge	1.74%	2.61%	3.48%

*Estimates of percent taxes paid based on Treasury Department analysis of 1981 corporate income taxes (IRS Publication 16, Rev. 7-84).

SUPERFUND SURCHARGE PROPOSAL—"SUPERFUND TAX EQUITY ACT"

All corporate taxpayers pay a surcharge on Federal income taxes due (IRS Form 1120, line 31).

ADVANTAGES

Accepts integrity of federal tax code as defined and amended by Congress.

Only corporations that are profitable and owe Federal taxes in a given year would pay.

Stable revenue base, relying on U.S. Treasury tax receipts projections.

CRITICISMS/REBUTTALS

Imposes broad-based corporate responsibility to finance Superfund cleanup, irrespective of direct contribution to Superfund problem—a major criticism by those not taxed and not engaged in industrial processes.

REBUTTAL

(1) All businesses have benefited from the production of chemicals and metals and should contribute toward resolving the problem.

(2) Current feedstock tax bears little or no relationship to a company's contribution to Superfund problems.

Those profitable industrial corporations able to avoid taxes because of deductions and credits would not pay—a criticism of tax advocates.

REBUTTAL

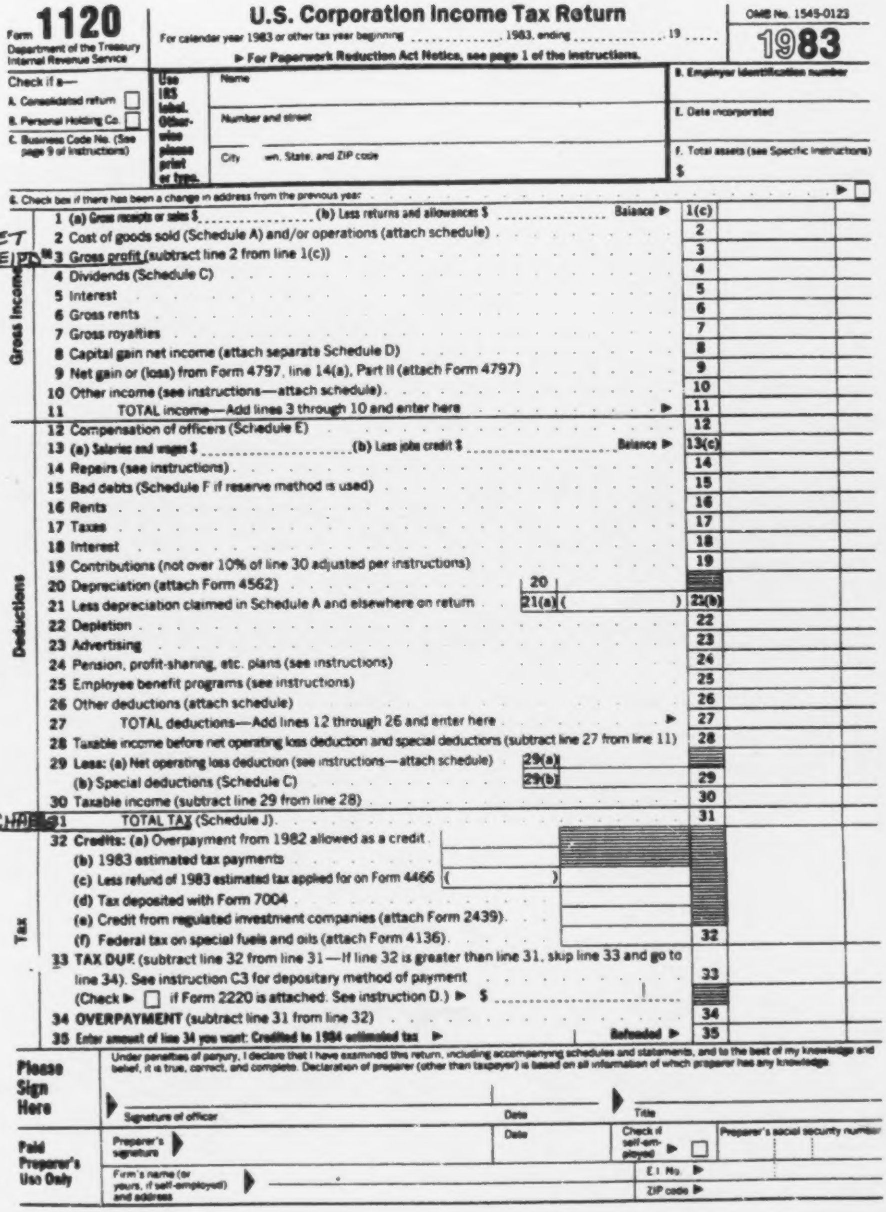
(1) Tax "reform" will change this.

(2) Proposal can be amended to apply surcharge before certain credits/deductions, thus broadening the tax base even further and allowing the surcharge rate to be reduced.

Criticized as a tax that could be increased or expanded to subsidize other environmental programs.

REBUTTAL

This widespread concern makes Congressional action to include other environmental programs unlikely.



Form **1120**
Department of the Treasury
Internal Revenue Service

U.S. Corporation Income Tax Return

For calendar year 1983 or other tax year beginning .... 1983, ending .... 19 .....

▶ For Paperwork Reduction Act Notice, see page 1 of the instructions.

OMB No. 1545-0123

1983

Check if a—
A. Consolidated return ☐
B. Personal Holding Co. ☐
C. Business Code No. (See page 9 of instructions)

Use IRS label. Otherwise please print or type.
Name
Number and street
City or town, State, and ZIP code

D. Employer identification number
E. Date incorporated
F. Total assets (see Specific Instructions) $

G. Check box if there has been a change in address from the previous year ▶ ☐

Gross Income

1 (a) Gross receipts or sales $ .... (b) Less returns and allowances $ .... Balance ▶ 1(c)
NET RECEIPTS
2 Cost of goods sold (Schedule A) and/or operations (attach schedule) 2
3 Gross profit (subtract line 2 from line 1(c)) 3
4 Dividends (Schedule C) 4
5 Interest 5
6 Gross rents 6
7 Gross royalties 7
8 Capital gain net income (attach separate Schedule D) 8
9 Net gain or (loss) from Form 4797, line 14(a), Part II (attach Form 4797) 9
10 Other income (see instructions—attach schedule) 10
11 TOTAL income—Add lines 3 through 10 and enter here ▶ 11

Deductions

12 Compensation of officers (Schedule E) 12
13 (a) Salaries and wages $ .... (b) Less jobs credit $ .... Balance ▶ 13(c)
14 Repairs (see instructions) 14
15 Bad debts (Schedule F if reserve method is used) 15
16 Rents 16
17 Taxes 17
18 Interest 18
19 Contributions (not over 10% of line 30 adjusted per instructions) 19
20 Depreciation (attach Form 4562) 20
21 Less depreciation claimed in Schedule A and elsewhere on return 21(a) ( ) 21(b)
22 Depletion 22
23 Advertising 23
24 Pension, profit-sharing, etc. plans (see instructions) 24
25 Employee benefit programs (see instructions) 25
26 Other deductions (attach schedule) 26
27 TOTAL deductions—Add lines 12 through 26 and enter here ▶ 27
28 Taxable income before net operating loss deduction and special deductions (subtract line 27 from line 11) 28
29 Less: (a) Net operating loss deduction (see instructions—attach schedule) 29(a)
(b) Special deductions (Schedule C) 29(b) 29
30 Taxable income (subtract line 29 from line 28) 30

Tax

SURCHAR
31 TOTAL TAX (Schedule J) 31
32 Credits: (a) Overpayment from 1982 allowed as a credit
(b) 1983 estimated tax payments
(c) Less refund of 1983 estimated tax applied for on Form 4466 ( )
(d) Tax deposited with Form 7004
(e) Credit from regulated investment companies (attach Form 2439)
(f) Federal tax on special fuels and oils (attach Form 4136) 32
33 TAX DUE (subtract line 32 from line 31—If line 32 is greater than line 31, skip line 33 and go to line 34). See instruction C3 for depositary method of payment 33
(Check ▶ ☐ if Form 2220 is attached. See instruction D.) ▶ $ ....
34 OVERPAYMENT (subtract line 31 from line 32) 34
35 Enter amount of line 34 you want: Credited to 1984 estimated tax ▶ Refunded ▶ 35

Please Sign Here

Under penalties of perjury, I declare that I have examined this return, including accompanying schedules and statements, and to the best of my knowledge and belief, it is true, correct, and complete. Declaration of preparer (other than taxpayer) is based on all information of which preparer has any knowledge.

▶ Signature of officer — Date ▶ Title

Paid Preparer's Use Only

Preparer's signature ▶ — Date — Check if self-employed ▶ ☐ — Preparer's social security number
Firm's name (or yours, if self-employed) and address ▶ — E.I. No. ▶ — ZIP code ▶

Mr. JACOBS. Thank you.

Mr. Paul, I believe you are next.

STATEMENT OF JOHN PAUL, DIRECTOR OF GOVERNMENTAL AFFAIRS, AMAX, INC., ON BEHALF OF THE AMERICAN MINING CONGRESS

Mr. PAUL. Thank you, Mr. Chairman. I'm director of governmental affairs for AMAX, Inc, which is a diversified mining and energy company with operations throughout the world.

I am testifying today on behalf of the American Mining Congress which is an industry association that represents producers of most of America's metals, coal, industrial and agricultural minerals, and the manufacturers of mining and mineral processing equipment.

The mining industry can and does recognize the realities and the pressures that argue for CERCLA reauthorization. While supporting reauthorization, however, AMC must emphasize the significant differences between chemical waste dumps on the one hand and mining and mineral processing waste on the other.

Those differences, including waste volumes, stabilities and toxicities, must be recognized if CERCLA is to be reauthorized in a manner that treats the domestic mining industry equitably.

While today's testimony will concentrate on the funding aspects of Superfund, we would also suggest that a reasonable approach is needed not only in funding Superfund, but also in its provisions covering liability, the cleanup requirements, and other critical issues. Those issues have been addressed in our written statement.

The specific points I want to address in my oral statement are as follows: First, the mining and mineral processing industry already contributes to Superfund in amounts that are reasonably related to the proportion of mining sites on the national priority list. The industry should not bear a disproportionate share of the total Superfund tax burden.

There have been expressions of concern that the mining industry has not paid its "fair share" of Superfund taxes. Some parties have even been under the mistaken impression that the mining industry has paid no taxes.

The fact is that the mining industry has, since April 1, 1981, paid Superfund taxes that by our own unofficial calculations appear proportional to the number of mining related sites on the NPL.

That's about 4 percent of the fund.

There are good reasons to believe that the industry's contribution to alleged Superfund problems has been significantly exaggerated by the bias against mining related sites inherent in the EPA's hazard ranking system, which is known as the MITRE model.

In appendix II to our written statement we also go into some detail in regard to that.

Some also argue that metals should bear a greater share of the CERCLA taxes because metals have been detected in a large number of NPL sites. This argument is also fallacious. Metals are naturally occuring elements in the Earth's crust, and they are present in many industrial sites that are unrelated to the mining industry.

This is not to suggest that all appearances of metals and metal bearing wastes at CERCLA sites are unrelated to our industry's operations. We do suggest, however, that the large number of sites in which metals or their compounds have been found is not a fair measure of our industry's responsibility.

Second, the Mining Congress supports a broad-based tax mechanism, preferably a manufacturers' excise tax, in lieu of other Superfund tax mechanism, and particularly opposes the imposition of any waste-end tax.

The waste-end tax concept is particularly inappropriate for high volume, low toxicity wastes, such as those of our industry. Moreover, we believe that the waste-end tax, as a general concept, is an inappropriate and counterproductive approach to funding CERCLA.

Some advocates of a waste-end tax see that tax as an incentive for waste generators to reduce the volumes of waste on which they would be taxed.

While this is a theoretically attractive concept, it can have very counterproductive ramifications.

First, only American industry would bear the burden of waste-end taxes. Since only waste generated and disposed of in this country would be the subject of tax, the waste-end tax therefore clearly discriminates in favor of foreign producers, and adds an unfair advantage to imported products.

The projections for waste-end tax are also questionable. I refer you to the GAO report of 1984, and we understand that this committee received a report from the Joint Committee on Taxation earlier this week in which the Joint Committee said it recognizes the GAO concerns, but also adds a very new perspective by noting on page 80, "Waste intensive products would be priced out of the market by imports that have few if any regulations covering the disposal of hazardous waste."

Third and finally, to the extent funds come from industrial sources, a broad based tax, and we say preferably a manufacturers' excise tax, should be applied. We recognize there are pressures for the increase in funding to fund the Superfund, but we believe a broader based tax is essential for the adequate funding of CERCLA and several initiatives have been put forward.

There are proposals to have corporations pay the tax based on gross or net receipts, a surtax on Federal income, a tax on earnings and profits, and a manufacturers' environmental excise tax.

We would support the latter for the following reasons: We believe that any tax must have certain criteria, and those criteria basically include: It must have adequacy of revenue, equal treatment of imported and domestic products, consideration of competitiveness of U.S. exports, and ease of administration.

I think you will find under scrutiny that the excise tax proposed particularly by Senators Bentsen and Wallop in the Senate clearly meets all four of those criteria.

We believe that the excise tax can supply necessary funds while spreading the burden equitably among all who produce, process, import and sell products in the United States. Also because the MEET will capture imported products derived from basic feedstocks, the market distortion and competitive inequities of a tax on feedstock can be avoided.

As importantly, U.S. exports could still compete for foreign markets because the tax could be rebated on exports.

In summary, we support a broad-based excise tax to raise private sector funds. We oppose the imposition of a waste-end tax and believe that any revenues from a waste-end tax could be generated more equitably and more easily by a broad-based tax.

Finally, we believe that a single CERCLA tax, such as an excise tax, is more consistent with the concept of tax simplification than two or three different types of taxes.

Thank you, Mr. Chairman.

[The prepared statement follows:]

STATEMENT OF JOHN PAUL, DIRECTOR OF GOVERNMENTAL AFFAIRS, AMAX INC., ON BEHALF OF THE AMERICAN MINING CONGRESS

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PRESIDENT

MAJOR POINTS

1. The mining and mineral processing industry, already contributing to Superfund in amounts that are reasonably related to the proportion of mining sites on the NPL, should not bear a disproportionate share of the total Superfund tax burden.

2. To the extent funds come from industrial sources, a broad-based tax--preferably a manufacturing excise tax--should be applied.

3. The American Mining Congress supports a broad-based tax mechanism, preferably the MEET, in lieu of other Superfund tax mechanisms, and particularly opposes the imposition of any waste-end taxes.

4. Any taxing provisions should recognize the reality of the international minerals market by avoiding the imposition of inequitable burdens on the domestic minerals industry vis-a-vis imports.

LIABILITY AND OTHER PROVISIONS

1. Limit joint and several liability for site cleanup to those circumstances in which it is appropriate under common law and include, wherever appropriate, apportionment of liability based on a responsible party's contribution to the harm.

2. Strengthen post-closure liability protection so that companies that lawfully close and monitor hazardous waste disposal facilities for the required site-specific post-closure period, are not required to bear perpetual liability for those facilities.

3. Require cleanup of sites so as to protect human health and the environment, based on site- and waste-specific conditions.

4. Limit Superfund's treatment of "pollutants and contaminants" to the cleanup of releases that, because of the amount and concentration of the pollutant or contaminant, could truly pose an imminent and substantial endangerment to health.

5. Require that EPA revise the Hazard Ranking System/Mitre Model so that it can more accurately reflect relative risks between sites and eliminate the System's bias against sites having high volumes of low-toxicity wastes.

6. Clarify that Superfund tax provisions are not intended to be applied to intermediates, so that a reauthorized CERCLA will be consistent with current law as enacted by Congress in the Deficit Reduction Act of 1984.

7. "Victim compensation" proposals to date have not struck a reasonable balance. New proposals should be considered on their merits, but should be considered apart from Superfund.

Good morning. My name is John Paul. I am Director of Governmental Affairs for AMAX Inc., a diversified mining and energy company with operations throughout the United States and abroad. I am testifying today for the American Mining Congress (AMC).

AMC is pleased to offer testimony on the reauthorization of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA or Superfund).

AMC is an industry association that includes (1) producers of most of America's metals, coal, and industrial and agricultural minerals; (2) manufacturers of mining and mineral processing machinery, equipment and supplies, and (3) financial institutions and engineering and consulting firms that serve the mining industry. AMC appreciates the opportunity to share with the committee some of our industry's concerns regarding the reauthorization of Superfund.

The mining industry will continue to work with Congress and the Administration to develop an effective means of addressing problems that have arisen out of past mining activity.

We also want to assure the members of this committee that the mining industry can and does recognize the realities and the pressures that argue for CERCLA reauthorization. It would appear that many more sites will eventually be listed on the National Priorities List (NPL), and that other sites will require emergency cleanup or removal actions. The pressures are compounded by an apparent inadequacy of the current CERCLA funding mechanism to supply monies needed for all sites now on the NPL as well as future site requirements.

AMC supported Superfund legislation in 1980. Our industry has continued to support that law and its reasonable reauthorization, as evidenced by AMC testimony and statements before this committee, the Senate Committee on Environment and Public Works and the House Subcommittee on Commerce, Transportation and Tourism.

While supporting CERCLA reauthorization, however, AMC must emphasize the significant differences between chemical waste dumps on the one hand and mining and mineral processing waste on the other. Those differences, including waste volumes, stabilities and toxicities, must be considered if CERCLA is to be reauthorized in a manner that treats the domestic minerals industry equitably. A reasonable approach is needed, not only in funding Superfund but also in its provisions covering liability, cleanup requirements and other critical issues.

The specific points we wish to address are these:

1. The mining and mineral processing industry, already contributing to Superfund in amounts that are reasonably related to the proportion of mining sites on the NPL, should not bear a disproportionate share of the total Superfund tax burden.

There have been expressions of concern in the past that the mining industry has not paid its "fair share" of Superfund taxes. Some parties have even been under the mistaken impression that the mining industry has paid no taxes. The fact is that the mining industry has, since April 1, 1981, paid Superfund taxes. Our industry's contributions, by our own unofficial calculations, appear proportional to the number of mining-related sites on the NPL--about four percent. Some 1984 and 1985 proposals, notably H.R. 5640 and H.R. 2022, would raise the industry's tax burden to approximately one billion dollars over a five-year term, about 10 percent of a $10 or $12 billion Superfund. (See Appendix I for a breakout of H.R. 5640 taxes. H.R. 2022 feedstock taxes are virtually identical to H.R. 5640.)

There are good reasons to believe that the industry's contribution to alleged Superfund "problems" has been significantly exaggerated by the bias against mining-related sites inherent in EPA's Hazard Ranking System (also known as the "Mitre Model").

It has also been argued that metals should bear a greater share of CERCLA taxes because metals have been detected in a large number of NPL sites. This argument, too, is fallacious. Metals are naturally occurring elements of the earth's crust. They are present also in many industrial wastes unrelated to the mining industry. This is not to suggest that all appearances of metals and metal-bearing wastes at CERCLA sites are unrelated to our industry's operations; we do suggest, however, that the large number of sites at which metals or their compounds have been found is not a fair measure of this industry's responsibility.

2. To the extent funds come from industrial sources, a broad-based tax--preferably a manufacturing excise tax--should be applied.

As pressures increase to expand the level of Superfund tax revenues, it becomes apparent that the current feedstock tax system will be inadequate. An expanded feedstock tax, however, would certainly be inequitable and further aggravate competitive problems for current and new taxpayers.

We believe a broader tax base is essential for adequate funding of CERCLA. Several initiatives have been put forward. There are proposals to have corporations pay a CERCLA tax of minimal rates based upon the corporation's gross or net receipts, a surtax on a corporation's federal income tax, a tax on earnings and profits, and a manufacturers environmental excise tax. All these measures are worthy of this committee's consideration. According to the Joint Committee on Taxation, broad-based taxes ". . .likely would produce relatively stable revenue compared to more narrow alternatives such as a tax on hazardous waste. . ." and ". . .would cause less economic dislocation than an equal revenue tax on chemical feedstocks or hazardous waste disposal. . . ."1/

After reviewing the above broad-based tax alternatives, AMC wishes to express its general, although not exclusive, preference for the concept of a manufacturers environmental excise tax (MEET).

1/ Joint Committee on Taxation, "Background and Issues Relating to the Reauthorization and Financing of Superfund," April 24, 1985, p. 67.

Such a concept is contained in S. 957, sponsored by Senators Bentsen and Wallop. We urge this committee to give serious attention to such an approach.

Let us be clear about one result of such a tax: The mining industry's total contributions to CERCLA would increase from their present level. No one welcomes additional taxes, particularly in an industry still struggling to recover from the recent devastating recession and the continuing onslaught of imported minerals.

We have recognized, however, that CERCLA does require increased funding. The criteria for a CERCLA tax should include:

- adequacy of revenue
- equal treatment of imported and domestic products
- consideration of competitiveness of U.S. exports
- ease of administration

The excise tax concept meets these criteria and, in addition, recognizes that the problem of hazardous wastes is a broad, societal problem, not one confined to a few specific industries.

We believe that the excise tax concept can supply the necessary funds while spreading the burden equitably among all who produce, import and sell products in the United States. A relatively modest rate of less than 0.1 percent could raise approximately $1 billion annually. Because the MEET will capture imported products derived from basic feedstocks, the market distortion and competitive inequities of a tax on specific feedstock materials can be avoided. U.S. exporters could still compete for foreign markets because the tax could be rebated on exports.

AMC also believes that any revenues that might be anticipated from a waste-end tax can more easily and equitably be raised by a broad-based tax such as the MEET. Manufactuers already have in place a sales and purchase billing system that could be used to compute the amount of tax due the government. The Treasury Department, through the Internal Revenue Service (IRS), already audits existing excise taxes and thus a MEET should pose no new conceptual difficulties for the IRS.

3. The American Mining Congress supports a broad-based tax mechanism, preferably the MEET, in lieu of other Superfund tax mechanisms, and particularly opposes the imposition of any waste-end taxes.

The waste-end tax concept is particularly inappropriate for high-volume, low-toxicity wastes such as those of our industry. Moreover, we believe that the waste-end tax as a general concept is an inappropriate and counterproductive approach to funding CERCLA.

We understand that some advocates of a waste-end tax see that tax as an incentive for waste generators to reduce the volumes of waste on which they would be taxed. While this is a theoretically attractive concept, it can have very counterproductive ramifications.

Only American industry would bear the burden of waste-end taxes, since only waste generated and disposed of in this country would be subject to the tax. The waste-end tax therefore clearly discriminates in favor of foreign producers and imported products.

Projections of waste-end tax revenues are at least questionable. States' experiences with waste-end taxes have illuminated serious pitfalls in waste-end tax approaches, according to a 1984 General Accounting Office (GAO) report:

> GAO found that the three states [studied] (1) have not collected the revenues they anticipated, (2) have not determined if the tax achieved its objective of encouraging more desirable waste management practices, and were concerned that a similar federal tax may reduce state tax revenues or increase the incentive to illegally dispose of hazardous waste.[2]

The GAO report also pointed out very serious questions on the ability of the government to administer and collect such a tax. It is clear that there would be a need to create new data systems to implement a waste-end tax. In turn, these changes would impose new recordkeeping costs and burdens both for government and the taxpayers.

Such administrative and financial complexities could be avoided by utilizing a broad-based tax approach such as the MEET. As noted earlier in our testimony, the basic data sources already exist, and the type of tax is one with which the IRS already is familiar.

2/ General Accounting Office, "State Experiences with Taxes on Generators or Disposers of Hazardous Waste," Report to the Chairman, Subcommittee on Commerce, Transportation and Tourism, Committee on Energy and Commerce, U.S. House of Representatives, May 4, 1984, p. ii.

4. Any taxing provisions should recognize the reality of the international minerals market by avoiding the imposition of inequitable burdens on the domestic minerals industry vis-a-vis imports.

Domestic minerals prices are largely determined by the highly competitive international market. This fact leads to imposition of unfair burdens on the domestic mining and mineral processing industry whenever government-mandated costs do not fall equally on imports.

The continued ability of mines and mineral processors in the United States to produce metals, including strategic minerals, is dependent upon the industry's competitiveness with foreign producers and, in particular, the industry's ability to absorb additional costs not borne by foreign competitors. The market prices for metals are a function of the international metals markets and therefore are strongly influenced by the production costs of foreign producers. As a result, U.S. producers cannot pass mandated costs on to customers via price increases. This requires the costs to be internalized, resulting in a weakened competitive position.

LIABILITY AND OTHER PROVISIONS

1. Limit joint and several liability for site cleanup to those circumstances in which it is appropriate under common law and include, wherever appropriate, apportionment of liability based on a responsible party's contribution to the harm.

State and federal courts now have the authority to impose joint and several liability when the circumstances of a case make such liability appropriate.

In 1984, the House would have imposed joint and several liability in all cases where more than one defendant was involved. In addition, apportionment would have been possible only after an adjudication that defendants were jointly and severally liable, and could have been done only on the basis of the harm being divisible, rather than defendants' contribution to harm. As a practical matter, divisibility of harm is far more difficult to prove than divisibility of contribution to harm, thus assuring that for most cases there would be no apportionment and each defendant would remain liable for the full cost of site cleanup.

Congress in reauthorizing CERCLA should recognize the right of apportionment based on the divisibility of defendants' contributions to the harm. Such an approach would treat involved parties more equitably. If some parties could not be identified or should be unable to pay their fair share of costs, the trust fund should pay those portions of the costs.

2. Strengthen post-closure liability protection so that companies that lawfully close and monitor hazardous waste disposal facilities for the required site-specific post-closure period, are not required to bear perpetual liability for those facilities.

Superfund currently imposes a $2.13/dry weight ton tax on all RCRA hazardous wastes received at a RCRA-permitted hazardous waste disposal facility. The trust fund created with these tax dollars is to be used (among other purposes) to pay for remedial action at these disposal facilities following their lawful closure and successful completion of a post-closure monitoring period.

Our industry has viewed the post-closure trust fund as a vehicle that, should mining industry wastes later be determined to be hazardous, could enable individual companies to close facilities on a site-specific basis in compliance with the law and, absent any negligence in closing and monitoring the site, legitimately end company involvement with that site. While our industry would require a means of participating in this system other than the current waste-end tax, we do support the concept of legitimate release from post-closure liability.

3. Require cleanup of sites so as to protect human health and the environment, based on site- and waste-specific conditions.

The issue of cleanup flexibility is important at all sites but particularly at mining sites where the wastes are not "hazardous substances" under RCRA and thus frequently have no standards that were designed for those specific circumstances.

EPA, in its National Contingency Plan (NCP) revisions, utilizes a flexible, site-by-site approach in determining the extent of cleanup, while at the same time making existing environmental standards a factor to be considered when determining site cleanup.

AMC strongly supports the current requirements of Section 111 of S. 51, as reported out of the Senate Environment and Public Works Committee. That bill maintains EPA's flexibility, stating that cleanup actions should assure protection of health and environment and are to be relevant and appropriate to each release of hazardous substances, pollutants or contaminants.

4. Limit Superfund's treatment of "pollutants and contaminants" to the cleanup of releases that, because of the amount and concentration of the pollutant or contaminant, could truly pose an imminent and substantial endangerment to health.

In 1984, both houses made extensive changes in the way Superfund dealt with "pollutants or contaminants," including establishing liability for releases or threatened releases of such substances. The general thrust was to make pollutants or contaminants equivalent to hazardous substances for the purposes of Superfund, including the victim compensation provisions of the bills.

Unfortunately, neither house incorporated a more reasonable definition of "pollutants or contaminants." Responses should only take place where the release or threatened release is in amounts and concentrations that could truly present an imminent and substantial threat.

It would be unreasonable to equate "pollutants or contaminants" with hazardous substances for every purpose under Superfund. "Imminent and substantial danger" should be retained as the threshold for government action and cost liability. The "danger" should be directly linked to the release of materials in amounts and concentrations that could pose an imminent and substantial danger to health and welfare.

5. Require that EPA revise the Hazard Ranking System/Mitre Model so that it can more accurately reflect relative risks between sites and eliminate the System's bias against sites having high volumes of low-toxicity wastes.

Superfund now requires that EPA examine sites and rank them according to a number of considerations based on relative risk to health, welfare or the environment, and to assign priorities to the known releases or threatened releases. The law does not require EPA to use the current Hazard Ranking System (HRS or Mitre Model) to accomplish the statutory goal.

Through studies done for AMC by TRC Environmental Consultants, Inc., it appears that the Mitre Model is an inappropriate tool for assessing risks at mining sites with their huge volumes of low-toxicity wastes located far from major population areas (see Appendix II).

The Mitre Model scores are based upon factors including, among others, quantity and toxicity of waste. For quantity, a maximum score in the Mitre Model is assigned when 10,000 drums or 2,500 tons of waste are present at a site. Ten thousand drums of chemical waste could take months or years to accumulate and could, depending on the contents and location, represent a potential environmental problem of major proportions, or could pose an extremely serious threat to health. Twenty-five hundred tons of relatively innocuous mining or mineral processing wastes, however, may be generated in only a few hours of operation at a typical facility and should not be considered equivalent to the "drum scenario" in any way.

In scoring the toxicity of a waste, the Mitre Model assigns a maximum score if heavy metals are present in any concentration. Most mine wastes will contain a fraction of a percent of heavy metals. Because of this presence, the wastes receive the same maximum scoring as wastes containing extremely toxic materials such as dioxin. Furthermore, the model fails to take into account the fact that metals will be attenuated by the soil whereas many other types of wastes will not.

As a result of these factors, the Mitre Model is not suitable for assessing the potential risk to the public or the environment from abandoned mining and mineral processing sites.

While the 1984 House bill was silent on this issue, the Senate Environment Committee unanimously approved an amendment, also contained in S. 51, that requires EPA to revise the HRS within 18 months from the bill's enactment. The revisions would make the HRS/Mitre Model more accurately reflect the true degree of risk at sites. This provision stems from the senators' concern that the current system is inadequate and discriminates against high-volume, low-toxicity waste sites such as are found in the mining industry.

6. Clarify that Superfund tax provisions are not intended to be applied to intermediates, so that a reauthorized CERCLA will be consistent with current law as enacted by Congress in the Deficit Reduction Act of 1984.

In 1983, the Internal Revenue Service (IRS) proposed a rule interpreting CERCLA tax provisions in a way that would have imposed a tax on intermediate forms of copper, lead and zinc. Because this attempt was contrary to Congress' intent in enacting Superfund in 1980, the Congress included in the Deficit Reduction Act of 1984 clear confirmation of its original intent, thus nullifying certain aspects of the IRS proposed rule.

In reauthorizing Superfund, Congress should again clearly state its intention that intermediate forms of taxable feedstocks appearing in domestic minerals production are not subject to the feedstock tax. By so stating, Congress can ensure rationality and consistency in tax administration and avoid imposing an inequitable burden upon domestic minerals producers.

7. "Victim compensation" proposals to date have not struck a reasonable balance. New proposals should be considered on their merits, but should be considered apart from Superfund.

Victim compensation legislation should be kept separate from Superfund reauthorization because:

- Initial studies are not yet finished and further studies will likely be needed.

- "Victim compensation" is a very broad concept going beyond simply the releases and sites that are the subject of Superfund.

- Many victim compensation proposals would overturn basic principles of the tort law system, including proof of causation of harm, and such revolutionary approaches should be thoroughly debated on their own merits.

- Finally, victim compensation could cripple efforts to clean up sites if compensation were to be financed from and integrated with the site cleanup funds and requirements of Superfund.

APPENDIX I

SUPERFUND TAX ON MINERALS INDUSTRY:

CURRENT LAW COMPARED TO H.R. 5640

(Based on 1983 data in short tons)

Current Law (Annual Rate) - $4,305,806

H.R. 5640	With Waste-End Tax	Without Waste-End Tax
1985	$109,261,835	$109,261,835
1986	136,405,024	136,405,024
1987	141,324,767	172,231,514
1988	156,105,794	182,127,413
1989	156,105,794	191,454,824
1990	156,105,794	191,454,824
TOTAL[1]	$855,309,008	$982,935,494

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[1] Not adjusted for rate of inflation as required by H.R. 5640 (i.e. percent of producer price increase). Consequently, the total tax is substantially understated.

SUPERFUND TAX ON MINERALS INDUSTRY - CURRENT LAW COMPARED TO H.R. 5640
(1983 data in short tons)

SUBSTANCE	CURRENT LAW TAX RATE/TON	1985 H.R. 5640 TAX RATE/TON	1983 AVG. PRICE/TON	U.S. PROD.	U.S. IMP.	TOTAL TAXABLE QUANTITY	CURRENT LAW REVENUE	1985 H.R. 5640 REVENUE
Antimony	$4.45	$30.00	$1,800	27,000	11,000	38,000	$ 169,100	$1,140,000
Arsenic	4.45	30.00	4,200	Unknown	187	187	800	5,610
Arsenic Trioxide	3.41	12.97	780	Unknown	12,125	12,125	41,300	157,261
Bromine	4.45	9.73	625	190,000	2,500	192,500	856,600	1,873,025
Cadmium	4.45	30.00	2,200	1,102	2,425	3,527	15,700	105,810
Chromium	4.45	30.00	7,500	0	210,000	254,800	934,500	7,644,000
Chromite	1.52	1.52	74	0	210,000	210,000	319,200	319,200
Cobalt	4.45	30.00	25,000	350	9,000	9,350	41,600	280,500
Cupric Sulfate	1.87	23.18	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cupric Oxide	3.59	30.00	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cuprous Oxide	3.97	30.00	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Lead Oxide	4.14	No tax	Unknown	185,224	13,636	198,860	823,280	No tax
Mercury	4.45	30.00	8,700	1,482	342	1,824	8,100	54,720
Nickel	4.45	30.00	6,400	88,700	144,000	232,700	1,035,515	6,981,000
Zinc Chloride	2.22	10.55	Unknown	8,775	487	9,262	20,562	97,714
Zinc Oxide	No tax	14.43	788	129,596	31,588	161,184	0	2,325,885
Zinc Sulfate	1.90	8.30	Unknown	10,369	584	20,815	39,549	172,764
Aluminum Sulfate	No tax	3.52	Unknown	Unknown	Unknown	Unknown	0	Unknown
Aluminum Phosphide	No tax	30.00	Unknown	Unknown	Unknown	Unknown	0	Unknown
Asbestos	No tax	5.76	403	77,162	220,462	297,624	0	1,714,314
Barium Sulfide	2.13	7.13	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Lead	No tax	8.27	440	1,146,402	148,812	1,295,214	0	10,711,419
Copper	No tax	23.60	1,560	1,600,000	550,000	2,150,000	0	50,740,000
Lithium Carbonate	No tax	30.00	2,960	30,000[1]	100	30,100	0	903,000
Manganese	No tax	22.69	64	0	485,000	485,000	0	11,004,650
Selenium	No tax	30.00	7,600	386	331	717	0	21,510
Uranium Oxide	No tax	30.00	38.21[2]	13,500	41[2]	13,500	0	405,000
Vanadium	No tax	30.00	7,000	3,401	1,750	5,151	0	154,530
Zinc	No tax	12.48	840	325,181	672,409	997,590	0	12,449,923
TOTALS							$4,305,806	$109,261,835

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[1] 1984 production estimate

[2] Survey of U.S. Uranium Marketing Activity, DOE/EIA-0403 (1983)

SUPERFUND TAX ON MINERALS INDUSTRY - CURRENT LAW COMPARED TO H.R. 5640
(1986 - 1990 PROJECTIONS)

	1986 Rate	1986 Revenue	1987 Rate	1987 Revenue	1987 W/O Waste End Rate	1987 W/O Waste End Revenue	1988 Rate	1988 Revenue	1988 W/O Waste End Rate	1988 W/O Waste End Revenue
Antimony	30.00	1,140,000.00	30.00	1,140,000.00	35.00	1,330,000.00	30.00	1,140,000.00	35.00	1,330,000.00
Antimony Dioxide	30.00	unknown	30.00	unknown	35.00	unknown	30.00	unknown	35.00	unknown
Arsenic	30.00	5,610.00	30.00	5,610.00	35.00	6,545.00	30.00	5,610.00	35.00	6,545.00
Arsenic Trioxide	17.29	209,641.00	19.46	235,953.00	25.94	314,523.00	25.94	314,523.00	30.26	366,903.00
Bromine	12.97	2,496,725.00	14.59	2,808,575.00	19.46	3,746,050.00	19.46	3,746,050.00	22.70	4,369,750.00
Cadmium	30.00	105,810.00	30.00	105,810.00	35.00	123,445.00	30.00	105,810.00	33.00	123,445.00
Chromium	30.00	7,644,000.00	30.00	7,644,000.00	35.00	8,918,000.00	30.00	7,644,000.00	35.00	8,918,000.00
Chromite	1.52	319,200.00	1.52	319,200.00	1.70	357,000.00	1.70	357,000.00	1.98	415,800.00
Cobalt	30.00	280,500.00	30.00	280,500.00	35.00	327,250.00	30.00	280,500.00	35.00	327,250.00
Cupric Sulfate	30.00	unknown	30.00	unknown	35.00	unknown	30.00	unknown	35.00	unknown
Cupric Oxide	30.00	unknown	30.00	unknown	35.00	unknown	30.00	unknown	35.00	unknown
Cuprous Oxide	30.00	unknown	30.00	unknown	35.00	unknown	30.00	unknown	35.00	unknown
Lead Oxide										
Mercury	30.00	54,720.00	30.00	54,720.00	35.00	63,840.00	30.00	54,720.00	35.00	63,840.00
Nickel	30.00	6,981,000.00	30.00	6,981,000.00	35.00	8,144,500.00	30.00	6,981,000.00	35.00	8,144,500.00
Zinc Chloride	14.07	130,316.00	15.83	146,617.00	21.10	195,428.00	21.10	195,428.00	24.62	228,030.00
Zinc Oxide	19.24	3,101,180.00	21.65	3,489,634.00	28.86	4,651,770.00	28.86	4,651,770.00	33.67	5,427,065.00
Zinc Sulfate	11.07	230,422.00	12.45	259,146.00	16.60	345,529.00	16.60	345,529.00	19.37	403,187.00
Aluminum Sulfate	4.69	unknown	5.28	unknown	7.04	unknown	7.04	unknown	8.40	unknown
Aluminum Phosphate	30.00	unknown	30.00	unknown	35.00	unknown	30.00	unknown	35.00	unknown
Asbestos	7.68	2,285,752.00	8.64	2,571,471.00	11.52	3,428,628.00	11.52	3,428,628.00	13.44	400,067.00
Barium Sulfide	9.51	unknown	10.70	unknown	14.26	unknown	14.26	unknown	16.64	unknown
Lead	11.03	14,286,210.00	12.41	16,073,606.00	16.54	21,422,840.00	16.54	21,422,840.00	19.30	24,997,630.00
Copper	30.00	64,500,000.00	30.00	64,500,000.00	35.00	75,250,000.00	30.00	64,500,000.00	35.00	75,250,000.00
Lithium Carbonate	30.00	903,000.00	30.00	903,000.00	35.00	1,053,500.00	30.00	903,000.00	35.00	1,053,500.00
Manganese	30.00	14,550,000.00	30.00	14,550,000.00	35.00	16,975,000.00	30.00	14,550,000.00	35.00	16,975,000.00
Selenium	30.00	21,510.00	30.00	21,510.00	35.00	25,095.00	30.00	21,510.00	35.00	25,095.00
Uranium Oxide	30.00	405,000.00	30.00	405,000.00	35.00	472,500.00	30.00	405,000.00	35.00	472,500.00
Vanadium	30.00	154,530.00	30.00	154,530.00	35.00	180,285.00	30.00	154,530.00	35.00	180,285.00
Zinc	16.64	16,599,898.00	18.72	18,674,885.00	24.96	24,899,846.00	24.96	24,898,846.00	29.12	29,049,821.00
TOTAL		$136,405,024.00		$141,324,767.00		$172,231,574.00		$156,105,794.00		$182,127,413.00

SUPERFUND TAX ON MINERALS INDUSTRY - CURRENT LAW COMPARED TO H.R. 5640
(1986 - 1990 PROJECTIONS)
(Continued)

	1989 Rate	1989 Revenue	1989 W/O Waste End Rate	1989 W/O Waste End Revenue	1990 Rate	1990 Revenue	1990 W/O Waste End Rate	1990 W/O Waste End Revenue
Antimony	30.00	1,140,000.00	35.00	1,330,000.00	30.00	1,140,000.00	35.00	1,330,000.00
Antimony Dioxide	30.00	unknown	35.00	unknown	30.00	unknown	35.00	unknown
Arsenic	30.00	5,610.00	35.00	6,545.00	30.00	5,610.00	35.00	6,545.00
Arsenic Trioxide	25.94	314,523.00	34.59	419,404.00	25.94	314,523.00	34.59	419,404.00
Bromine	19.46	3,746,050.00	25.95	4,995,375.00	19.46	3,746,050.00	25.95	4,995,375.00
Cadmium	30.00	105,810.00	35.00	123,445.00	30.00	105,810.00	35.00	123,445.00
Chromium	30.00	7,644,000.00	35.00	8,918,000.00	30.00	7,644,000.00	35.00	8,918,000.00
Chromite	1.70	357,000.00	2.27	476,700.00	1.70	357,000.00	2.27	476,700.00
Cobalt	30.00	280,500.00	35.00	327,250.00	30.00	280,500.00	35.00	327,250.00
Cupric Sulfate	30.00	unknown	35.00	unknown	30.00	unknown	35.00	unknown
Cupric Oxide	30.00	unknown	35.00	unknown	30.00	unknown	35.00	unknown
Cuprous Oxide	30.00	unknown	35.00	unknown	30.00	unknown	35.00	unknown
Lead Oxide								
Mercury	30.00	54,720.00	35.00	63,840.00	30.00	54,720.00	35.00	63,840.00
Nickel	30.00	6,981,000.00	35.00	8,144,500.00	30.00	6,981,000.00	35.00	8,144,500.00
Zinc Chloride	21.10	195,428.00	28.13	260,540.00	21.10	195,428.00	28.13	260,540.00
Zinc Oxide	28.86	4,651,770.00	35.00	5,641,440.00	28.86	4,651,770.00	35.00	5,641,440.00
Zinc Sulfate	16.60	345,529.00	22.13	460,636.00	16.60	345,529.00	22.13	460,636.00
Aluminum Sulfate	7.04	unknown	9.35	unknown	7.04	unknown	9.35	unknown
Aluminum Phosphate	30.00	unknown	35.00	unknown	30.00	unknown	35.00	unknown
Asbestos	11.52	3,428,628.00	15.36	4,571,505.00	11.52	3,428,628.00	15.36	4,571,505.00
Barium Sulfide	14.26	unknown	19.01	unknown	14.26	unknown	19.01	unknown
Lead	16.54	21,422,840.00	22.05	28,559,469.00	16.54	21,422,840.00	22.05	28,559,469.00
Copper	30.00	64,500,000.00	35.00	75,250,000.00	30.00	64,500,000.00	35.00	75,250,000.00
Lithium Carbonate	30.00	903,000.00	35.00	1,053,500.00	30.00	903,000.00	35.00	1,053,000.00
Manganese	30.00	14,500,000.00	35.00	16,975,000.00	30.00	14,500,000.00	35.00	16,975,000.00
Selenium	30.00	21,510.00	35.00	25,095.00	30.00	21,510.00	35.00	25,095.00
Uranium Oxide	30.00	405,000.00	35.00	472,500.00	30.00	405,000.00	35.00	472,500.00
Vanadium	30.00	154,530.00	35.00	180,285.00	30.00	154,530.00	35.00	180,285.00
Zinc	24.96	24,898,846.00	33.28	33,199,795.00	24.96	24,898,846.00	33.28	33,199,795.00
TOTAL		$156,105,794.00		$191,454,824.00		$156,105,794.00		$191,454,824.00

H.R. 5640

SUPERFUND TAX PROVISION

SEC. 302. INCREASE IN TAX ON CERTAIN CHEMICALS.

(a) INCREASE IN RATE OF TAX; ADDITIONAL CHEMICALS TAXED.—Subsection (b) of section 4661 of the Internal Revenue Code of 1954 (relating to amount of tax imposed on certain chemicals) is amended by striking out the table contained in such subsection and inserting in lieu thereof the following:

In the case of:	The tax (before any inflation adjustment) is the following amount per ton:			
	Sales during 1985	Sales during 1986	Sales during 1987	Sales during 1988 and thereafter until the termination date
Organic substances:				
Acetylene	$29.91	$30.00	$30.00	$30.00
Benzene	6.60	8.80	9.90	13.20
Butadiene	9.79	13.05	14.69	19.58
Butane	4.87	5.60	6.30	8.40
Butylene	5.15	6.87	7.73	10.30
Coal-derived light oils	5.02	6.69	7.53	10.04
Coal tars	1.78	2.37	2.67	3.56
Ethylene	6.89	9.19	10.33	13.78
Methane	3.44	3.44	3.44	4.00
Naphthalene	6.89	9.19	10.33	13.78
Propylene	5.87	7.83	8.80	11.74
Toluene	5.19	6.92	7.78	10.38
Xylene (before 1989)	10.65	14.05	16.75	22.35
Xylene (after 1988)				15.40
Inorganic substances:				
Aluminum sulfate	3.52	4.69	5.28	7.04
Aluminum phosphide	30.00	30.00	30.00	30.00
Ammonia	2.64	3.52	3.96	5.28
Antimony	30.00	30.00	30.00	30.00
Antimony trioxide	30.00	30.00	30.00	30.00
Arsenic	30.00	30.00	30.00	30.00
Arsenic trioxide	12.97	17.29	19.46	25.94
Asbestos	5.76	7.68	8.64	11.52
Barium sulfide	7.13	9.51	10.70	14.26
Bromine	9.73	12.97	14.59	19.46
Cadmium	30.00	30.00	30.00	30.00
Chlorine	3.05	4.07	4.57	6.10
Chromite	1.52	1.52	1.52	1.70
Chromium	30.00	30.00	30.00	30.00
Cobalt	30.00	30.00	30.00	30.00
Copper	23.50	30.00	30.00	30.00
Cupric oxide	30.00	30.00	30.00	30.00
Cupric sulfate	23.18	30.00	30.00	30.00
Cuprous oxide	30.00	30.00	30.00	30.00
Hydrochloric acid	0.94	1.25	1.41	1.88
Hydrogen fluoride	23.50	30.00	30.00	30.00
Lead	8.27	11.03	12.41	16.54
Lithium carbonate	30.00	30.00	30.00	30.00
Manganese	22.69	30.00	30.00	30.00
Mercury	30.00	30.00	30.00	30.00
Nickel	30.00	30.00	30.00	30.00
Nitric acid	3.05	4.07	4.57	6.10
Phosphoric acid	7.65	10.20	11.48	15.30
Phosphorous	6.65	6.65	6.65	6.65
Potassium dichromate	15.03	20.04	22.54	30.00
Potassium hydroxide	9.83	13.11	14.75	19.66
Selenium	30.00	30.00	30.00	30.00
Sodium dichromate	18.48	24.64	27.72	30.00
Sodium hydroxide	2.82	3.76	4.23	5.64
Stannic chloride	30.00	30.00	30.00	30.00
Stannous chloride	30.00	30.00	30.00	30.00
Sulfuric acid	0.78	1.04	1.17	1.56
Uranium oxide	30.00	30.00	30.00	30.00
Vanadium	30.00	30.00	30.00	30.00
Zinc	12.48	16.64	18.72	24.96
Zinc chloride	10.55	14.07	15.83	21.10
Zinc oxide	14.43	19.24	21.65	28.86
Zinc sulfate	8.30	11.07	12.45	16.60

H.R. 5640

IF NO WASTE-END TAX IS ENACTED

SEC. 506. INCREASE IN TAX IF WASTE-END TAX NOT ENACTED.

(a) INCREASE IN TAX.—

(1) TAX ON PETROLEUM.—Subsections (a) and (b) of section 4611 of the Internal Revenue Code of 1954 (relating to environmental tax on petroleum), as amended by section 502, are each amended by striking out "7.86 cents" and inserting in lieu thereof "9.65 cents".

(2) TAX ON CERTAIN CHEMICALS.—Subsection (b) of section 4661 of such Code (relating to amount of tax imposed on certain chemicals), as amended by section 503, is amended by striking out the table contained in such subsection and inserting in lieu thereof the following:

"In the case of:	The tax (before any inflation adjustment) is the following amount per ton:		
	Sales during 1987	Sales during 1988 and 1989	Sales after 1989 and before the termination date
Organic substances:			
Acetylene	$35.00	$35.00	$35.00
Benzene	13.20	15.40	17.60
Butadiene	19.58	22.84	26.11
Butane	8.40	9.80	11.20
Butylene	10.30	12.02	13.73
Coal-derived light oils	10.04	11.71	13.39
Coal tars	3.56	4.15	4.75
Ethylene	13.78	16.08	18.37
Methane	4.00	4.67	5.33
Naphthalene	13.78	16.08	18.37
Propylene	11.74	13.70	15.65
Toluene	10.38	12.11	13.84
Xylene	21.30	21.77	20.53
Inorganic substances:			
Aluminum sulfate	7.04	8.40	9.35
Aluminum phosphide	35.00	35.00	35.00
Ammonia	5.28	6.16	7.04
Antimony	35.00	35.00	35.00
Antimony trioxide	35.00	35.00	35.00
Arsenic	35.00	35.00	35.00
Arsenic trioxide	25.94	30.26	34.59
Asbestos	11.52	13.44	15.36
Barium sulfide	14.26	16.64	19.01
Bromine	19.46	22.70	25.95
Cadmium	35.00	35.00	35.00
Chlorine	6.10	7.12	8.13
Chromite	1.76	1.98	2.27
Chromium	35.00	35.00	35.00
Cobalt	35.00	35.00	35.00
Copper	35.00	35.00	35.00

"In the case of	Sales during 1987	Sales during 1988 and 1989	Sales after 1989 and before the termination date
Cupric oxide	35.00	35.00	35.00
Cupric sulfate	35.00	35.00	35.00
Cuprous oxide	35.00	35.00	35.00
Hydrochloric acid	1.88	2.19	2.51
Hydrogen fluoride	35.00	35.00	35.00
Lead	16.54	19.30	22.05
Lithium carbonate	35.00	35.00	35.00
Manganese	35.00	35.00	35.00
Mercury	35.00	35.00	35.00
Nickel	35.00	35.00	35.00
Nitric acid	6.10	7.12	8.13
Phosphoric acid	15.30	17.85	20.40
Phosphorous	7.59	7.59	7.59
Potassium dichromate	30.06	35.00	35.00
Potassium hydroxide	19.66	22.94	26.21
Selenium	35.00	35.00	35.00
Sodium dichromate	35.00	35.00	35.00
Sodium hydroxide	5.64	6.58	7.52
Stannic chloride	35.00	35.00	35.00
Stannous chloride	35.00	35.00	35.00
Sulfuric acid	1.56	1.82	2.08
Uranium oxide	35.00	35.00	35.00
Vanadium	35.00	35.00	35.00
Zinc	24.96	29.12	33.28
Zinc chloride	21.10	24.62	28.13

APPENDIX II

ANALYSIS OF MINING SITES ON THE NATIONAL PRIORITIES LIST

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JUNE 9, 1983
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1.0 INTRODUCTION

The December 20, 1982 listing of 418 sites on the National Priorities List (NPL) was the culmination of an effort by EPA and numerous state agencies to identify the hazardous waste disposal sites in the United States which they feel present the greatest risk to human health and/or the environment.

Sites believed to present a hazardous waste problem were designated for the NPL by a two step procedure:

1. The states nominated sites for the NPL. Under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), which established this procedure, each state must have at least one site on the NPL.
2. An intendedly objective scoring system developed by the Mitre Corporation for EPA (the "Mitre Model") was then used to select sites. Mitre Model scores were furnished by the states with their nomination. In reality, EPA or EPA contractors did the scoring for the states in many cases.

When implementing the Section 103(c) notification requirements, EPA received 11,000 reports of facilities where hazardous wastes are or had been potentially treated, stored, or disposed (Federal Register/Vol. 47, No. 137, July 16, 1983. Page 31381.). Assuming this is correct, 690, or about 6 percent of all sites, were nominated for the NPL. Thus, the winnowing process in Step 1 appears to be much greater than in Step 2 (418/690 = 61 percent). For mining sites, 31 locations were nominated, of which 17 sites were selected. Mining sites thus represent only about 4 percent (17/418) of the total NPL. Presumably, like the other sites, the mining sites nominated represent only a small fraction of the total mining site population.

Step 2 of the listing process is a comparison of Mitre Model scores to compose the NPL. The model calculates scores for five "pathways" of potential

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*Times Beach, Missouri became the 419th site soon after the initial listing, and on September 1, 1983 an additional 133 sites were listed which were too late for inclusion in this analysis.

human exposure: ground water, surface water, air, direct contact, and fire and explosion. The first three pathways are combined (by taking the square root of the sum of the squares) into an overall "migration" score. The migration score is essentially the determinant for listing on the NPL. According to the National Contingency Plan (47 FR, 137, 31180, July 16, 1982) placement of sites on the NPL is based primarily on the migration score. The fire and explosion and direct contact scores may be used to determine if emergency attention is needed.

The score for each of the three migration pathways is the product of scores for three "factors":

1. The existence or likelihood of a release. An "observed release" which is basically a measurement of concentration above background at any location automatically produces the maximum score.
2. A "characteristics" score which is the sum of scores for quantity and toxicity/persistence for water pathways and quantity, toxicity, reactivity, and incompatibility for the air pathway. The score for "quantity" is determined by the total volume of waste while the score for parameters like "toxicity/persistence" is determined by the most toxic and persistent component.
3. Characteristics of the population or sensitive environment at risk such as distance to point of exposure and number of people involved. Potential scores for population factors are much larger than for purely environmental factors.

Use of the Mitre Model involves an explicit statement of what the problem is believed to be. That is, the substances of concern, the exposure pathway, and the populations or resources at risk are identified as part of the scoring.

In this report, the validity of the Mitre Model is analyzed in general but also, since the model was developed primarily for analysis of chemical waste dumps, the focus was primarily on the validity of these problem statements for mining sites.

In this report mining sites are defined by whether the practices at the site would qualify an operator for membership in the American Mining Congress (AMC). These practices include extraction, smelting, and refining but not fabrication into a final product. Only sites where mining practices are responsible for most of the Mitre Model score are analyzed. Using these criteria the 31 mining sites analyzed, including 17 NPL sites, are shown in Table 1.

This report is concerned solely with the technical validity of the listing process. Legal issues, such as the propriety of including mining sites in Superfund, are not considered. Nor is the primary concern a site by site characterization; this is done only to the extent necessary to provide perspective on the validity of the Mitre Model results.

Topics are:

- How 17 mining sites came to be selected for the NPL, specifically patterns apparent in their nomination by the states and in their scoring by the Mitre Model (Section 2).
- Validity of the Mitre Model analysis (Section 3):
    - For the 17 NPL mining Sites
    - For mining sites in general
    - For any use

  and

- Recommendations for alternative analytical methods for mining sites (Section 3).

TABLE 1

SITES ANALYZED

NPL Sites	Mining Activity*
1. Anaconda Smelter Anaconda, MT	Copper smelter
2. Bunker Hill Smelter Smelterville, ID	Lead and zinc smelter
3. California Gulch Leadville, CO	Metal mines
4. Celtor Chemical Humboldt County, CA	Metals reclamation mill
5. Central City - Idaho Springs Clear Creek and Gilpin Counties, CO	Gold mines
6. Commencement Bay Tacoma, WA	Metal smelting
7. Homestake Mining Milan, NM	Uranium mill
8. Iron Mountain Mine Shasta County, CA	Copper mines
9. Milltown Reservoir Milltown, MT	Copper mines and smelter
10. Mountain View Mobile Homes Globe, AZ	Asbestos mills
11. Palmerton Zinc Palmerton, PA	Zinc refinery and smelter
12. Silver Bow Creek Silver Bow and Deer Lodge Counties, MT	Metal mines and mill
13. Tar Creek - Kansas Cherokee County, KA	Zinc and lead mines
14. Tar Creek - Oklahoma Ottawa County, OK	Zinc and lead mines
15. United Nuclear Churchrock, NM	Uranium mill
16. U.S. Titanium Nelson County, VA	Mine and refinery
17. Whitewood Creek Black Hills, SD	Gold mines and mills

TABLE 1 (Continued)

SITES ANALYZED

NPL Sites	Mining Activity*
18. Alder Mill Twisp, WA	Metals mill
19. Anaconda Copper Weed Hts, NV	Copper mine
20. Anaconda Refinery Great Falls, MT	Copper and zinc refinery
21. ASARCO Globe Facility Commerce City, CO	Metal recovery (smelting)
22. Blackbird Mine Cobalt, ID	Mine
23. Gateway Mill Site Gateway, CO	Vanadium mill
24. Hendricks Mine Boulder, CO	Radium and fluorspar mill
25. Holden Mine Holden Village, WA	Metals mine
26. Loma Mill Loma, CO	Vanadium mill
27. Placerville Tram Placerville, CO	Vanadium tram/ore bin
28. Rio Tinto Mountain City, NV	Copper mine
29. Sawpit Tram Sawpit, CO	Vanadium tram/ore bin
30. Silver Mountain Mine Loomis, WA	Gold and silver mine
31. Vanadium Mill Site Vanadium, CO	Vanadium mill

*This is the mining activity mainly responsible for the Mitre Model score. At some sites nonmining uses also contribute to the score. At other sites the use has now changed from that listed.

2.0 HOW MINING SITES CAME TO BE LISTED

This section analyzes the two steps in listing: (1) Nomination and (2) Comparison of Mitre Model scores. In order to obtain an overview of the process, the EPA officials involved in the process in Regions III, VI, VII, VIII, IX, and X, as well as Washington were consulted. Contacts were also made with officials in the States of Idaho, New Mexico, Oklahoma, Virginia and Washington. The individuals contacted together with the topics discussed are shown in Table 2.

2.1 Nomination Determined by Extent of Existing Information

The most common reason given by those contacted as to why certain sites (not necessarily mining) were chosen was that they were "well known." Of course, this may mean that a site is already thought to have environmental problems but it also means that previous information has probably been collected about a site. This is important because in generating Mitre Model scores to be submitted with the nomination a general rule is: The more information available the higher the score. This result is as true for sites not causing any significant harm to the environment as it is for genuine problem sites.

The Mitre Model score rises with the available information for the following reasons. The instructions for using the model specify that where there is no data for a factor it is assigned a value of zero. Further, where data are lacking for two or more factors the entire pathway score (air, ground water, or surface water) is set to zero. Finally, the maximum score for any pathway in general only occurs for a measurement, or other conclusive

TABLE 2

INDIVIDUALS AND ORGANIZATIONS CONTACTED DURING MITRE MODEL ANALYSIS

Individual/Organization	Topic
Tedd Jett, Virginia State Water Control Board, Valley Regional Office	U.S. Titanium, VA
Sam Donnelly, Director, EPA Lab, Annapolis, MD	U.S. Titanium, VA
Dr. Gulevich, Virginia, Department of Environmental Protection, Office of Hazardous Waste	U.S. Titanium, VA
Al Willett, Virginia State Water Control Board	U.S. Titanium, VA
Mr. Fairchild, U.S. Geological Survey, Oklahoma City	Tar Creek, OK
Sue Lutz, Librarian, Oklahoma Water Resources Board, Oklahoma City, OK	Tar Creek, OK
Ray Peterson, EPA, Region X, Seattle, WA	Bunker Hill, ID
Jack Sceva, EPA, Region X, Seattle, WA	Bunker Hill, ID
Idaho Department of Health and Welfare, Division of Health	Bunker Hill, ID
Tony Bartolomeo and Pat McManus, EPA, Region III, Philadelphia, PA	Palmerton Zinc, PA
Bill Wentworth, N.U.S., Field Investigation Team	Palmerton Zinc, PA
Paula Bisson, Compliance Branch, EPA, Region IX, San Francisco, CA	Mountain View Mobile Homes, AZ
Dwight Hoenig, EPA, Region VI, Dallas, TX	Tar Creek, OK, Homestake Mining, NM, United Nuclear, NM
Alice Fuerst, EPA, Region VII, Kansas City, MO	Tar Creek, KA
Bill Rothenmeyer, EPA, Region VIII, Denver, CO	Central City/Clear Creek, CO and California Gulch
Stan Hitt, Soil Scientist, EPA, Region VI, Dallas, TX	Tar Creek, OK
Ken Alkema, EPA, Region VIII, Helena, MT	Anaconda Smelter, ASARCO, and Milltown Reservoir, MT

TABLE 2 (Continued)

INDIVIDUALS AND ORGANIZATIONS CONTACTED DURING MITRE MODEL ANALYSIS

Individual/Organization	Topic
Steve Caldwell, EPA, Washington, D.C.	Guidance furnished states, overview of scoring results
Stephen Romanow, EPA, Region VI, Dallas, TX	United Nuclear and Homestake Mining, NM
Trent Thomas, New Mexico Environmental Improvement Division	Homestake and United Nuclear, NM
B. Gallaher, New Mexico Environmental Improvement Division, Water Pollution Control Bureau	Homestake Mining Company, NM
Eric Johnson, EPA, Region III, Philadelphia, PA	Palmerton Zinc, PA
Ron Conrad, New Mexico Environmental Improvement Division	United Nuclear, NM
Jim Dunn, EPA, Region VIII, Helena, MT	Anaconda Smelter, MT Anaconda Refinery, MT
Mike Hiel, Montana Department of State Lands, Helena, MT	Silver Bow Creek, MT
Terry Grotbo, Montana Department of State Lands Helena, MT	Silver Bow Creek, MT
Ray Peterson, Water Quality Bureau, Montana Department of Health and Environment, Helena, MT	Silver Bow Creek, MT
Ted Duaime, Montana Bureau of Mines and Geology, Butte, MT	Silver Bow Creek, MT
Harry Van Drielen, Nevada Conservation and Natural Resources Department, Environmental Protection Division, Carson City, NV	Rio Tinto Copper Mine, NV The Anaconda Copper Company site in Weed Heights, NV
John Arrigo, Montana Health Department, Solid Waste, Helena, MT	Anaconda Refinery, Great Falls, MT
Steve Provant, Idaho Department of Health and Welfare, Division of the Environment, Boise, ID	Blackbird Mine, Cobalt, ID
Philip Nyberg, Region VIII, U.S. Environmental Protection Agency	Loma, Gateway, Sawpit, Nieumire, and Placerville vanadium sites in Colorado and Hendricks Mining fluorspar site

evidence, of a concentration above background (irrespective of whether or not that concentration is significant in terms of health standards and criteria). Several individuals involved in the nomination process indicated that they had to abandon scoring a number of sites where there was insufficient evidence.

Most of the 31 mining sites nominated for the NPL have prior studies; some have a history of EPA and/or state negotiations and in a few cases consent decrees. Further evidence of the fact that these sites are well known is the fact that all of the 17 NPL sites and 10 of the 14 additional sites have "observed" (that is, measured releases) in some route category.

Although a site may be well known for some environmental impact it may not be in an area scored by the Mitre Model. For mining sites, for example, acid mine drainage (pH) effects and the effect on aquatic life are often of concern, this is the case at 8 of the 17 NPL sites. No score is given for acidity in the Mitre Model.* The point is that unrelated or irrelevant studies from a human hazard standpoint can increase the Mitre Model score by providing a basis for an "observed" release. As described further below, the Mitre Model score is almost entirely determined by the amount of information available about a site (particularly measurements) and how many people live near a site rather than by any real measure of risk.

2.2 Cost May Also Be a Factor in Nomination

The individuals interviewed about the site nomination process, (again not just for mining sites), mentioned three other considerations. First, in some cases they tried to nominate sites that were thought to pose an actual health risk, an aim which requires no further comment. Secondly, they acknowledged that political visibility was a factor. Finally, they indicated that for some sites there was a financial incentive for nomination of particular sites. This could be either through direct access to Superfund money or by getting Federal help in seeking cost reimbursement from private parties. This aspect is important for mining sites because they may be among the most expensive to fully remediate when there are enormous worked areas and waste quantities. The financial incentive issue may vary from state to state. In some cases, irrespective of whether remediation makes sense from an overall cost/benefit standpoint, there may be an incentive for states to nominate high cost sites rather than low cost when Superfund pays 90 percent of the cost. In other cases, the 10 percent state payment required may be a disincentive to listing, particularly for very expensive sites to remediate. A numer of states do not have a mechanism, apart from general revenues, to fund this 10 percent contribution.*

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*Effects of acid mine drainage would not seem in themselves to constitute an "observed release." According to the National Contingency Plan, evidence of a release must be quantitative, such as measured levels of contaminants above background concentrations.

2.3 How the Mitre Model Scores Mining Sites

The decision to list some of the nominated mining sites is based on Mitre Model results from exposure through air, ground water, and surface water pathways with a combined score cutoff point of 28.5. A number of sites were also scored on the basis of direct contact and one NPL mining site was scored on the basis of fire and explosion although there was nothing ignitable at the site. This and the fact that 3 of the 31 sites (Sites 8, 21, and 25) examined had numerical scoring errors (that is, errors in addition, etc.) indicates a lack of quality control. It has not been possible to investigate more subtle quality control matters involving the acquisition and use of data.

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*In order to expedite Superfund activities EPA no longer requires state contributions during planning activities. Contributions by the state are still required for the actual remediation.

Table 3 shows which routes contributed to scoring at the 31 sites. Unlike ground water and surface water the air route only contributes when there is a measured release (rather than a likely release). The reason the air pathway does not occur for the non-NPL sites is that they generally do not have as extensive measurements as do the NPL sites. Almost all mining sites consider both ground and surface water pathways in the scoring with the highest scores generally being obtained for the ground water.

Overall structure of the model in combining source, release, and population information is shown in Figure 1. Note that as illustrated the information required is designed to be readily available rather than selfconsistent. For example, quantity of waste refers to everything at the site even though only a small portion may be toxic.

To gain some insight into what distinguishes the NPL from the non-NPL sites a sensitivity analysis was performed for each parameter occurring in each pathway score. This was done by decreasing each parameter score by 50 percent and calculating the overall change in the total score. To clarify this procedure, an example follows. At the first entry in Table 1, the Anaconda Smelter Site in Anaconda, Montana, the total migration score is 58.7. In obtaining this result, "quantity of waste" in the ground water pathway was scored as 8 points. If the quantity of waste had been scored as 4 points, the migration score would drop by 6.0 points to 52.7. For the parameter "toxicity/persistence" in the surface water pathway a score of 18 was recorded. If this score had been recorded as 9 points, the migration score would drop by 2.7 points to 56.0. Hence we describe the overall score

TABLE 3

MITRE MODEL SCORING

Percentage Breakdown by Migration Pathways

	Air (%)	Ground Water (%)	Surface Water (%)
NPL Sites (17)			
Considered	41	94	88
Highest Score	18	65	18
Non-NPL Sites (14)			
Considered	0	100	100
Highest Score	0	71	29

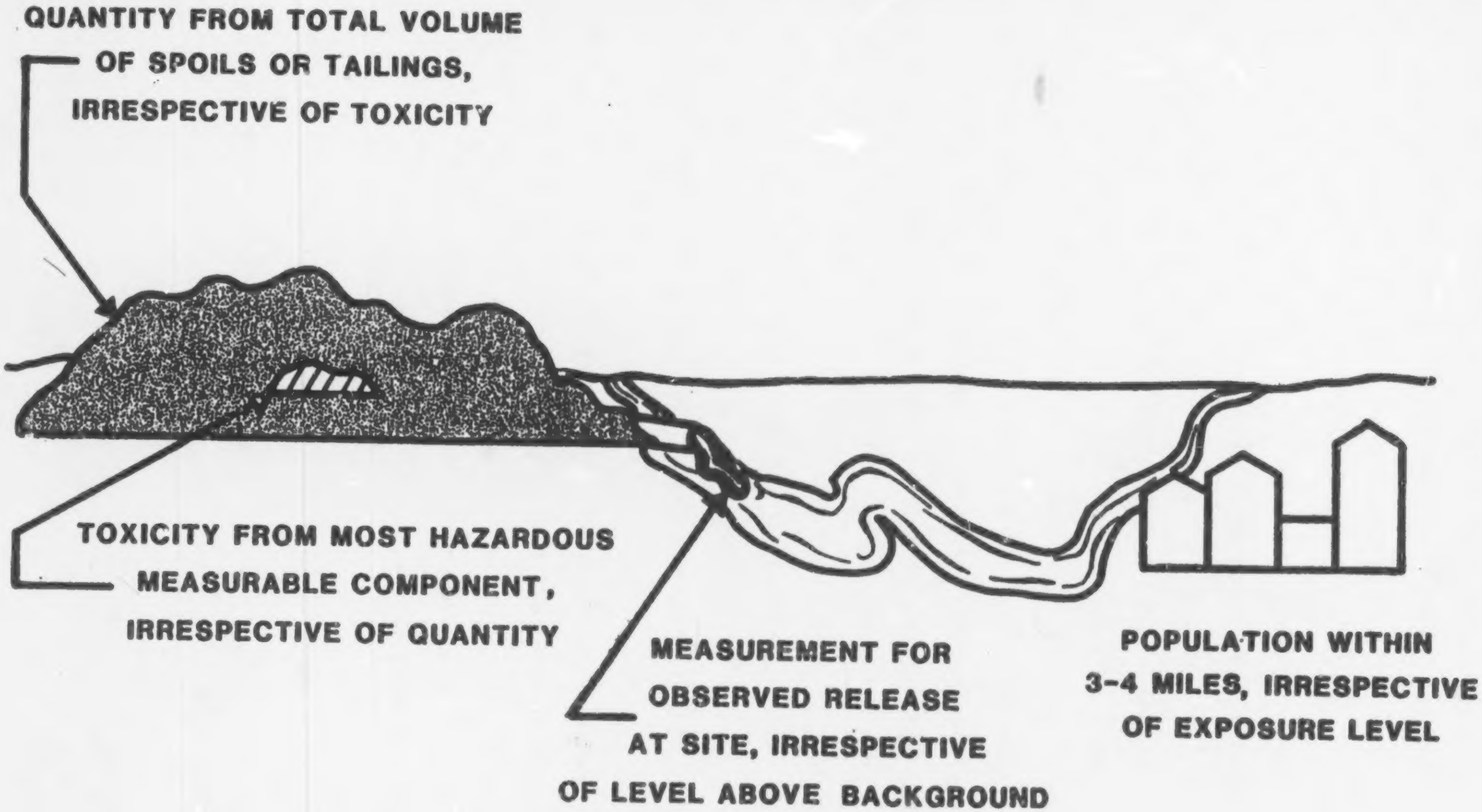
QUANTITY FROM TOTAL VOLUME OF SPOILS OR TAILINGS, IRRESPECTIVE OF TOXICITY
TOXICITY FROM MOST HAZARDOUS MEASURABLE COMPONENT, IRRESPECTIVE OF QUANTITY
MEASUREMENT FOR OBSERVED RELEASE AT SITE, IRRESPECTIVE OF LEVEL ABOVE BACKGROUND
POPULATION WITHIN 3-4 MILES, IRRESPECTIVE OF EXPOSURE LEVEL

Figure 1.

OVERVIEW: MITRE MODEL METHODOLOGY

as being more sensitive to the value of the first parameter. Table 4 shows the results when all pathways are combined so that "observed release" represents any of the three pathways, etc. Different pathways were combined because basically they all behave the same way.*

The fact that the maximum number of sites occurs along the diagonal in Table 4 indicates a consistent pattern of parameter importance. Whether or not there is an observed release is almost always (16 times out of 17) the most important factor; population factors and distance to well or intake are usually the second most important factor and so on.

This picture of how the Mitre Model works can be simplified even further by just considering the top four parameters in Table 4 and by recognizing that for parameters such as distance to well/population served or distance to stream/population, the population portion of the parameter is a good indicator of this whole factor (of course it is the whole factor for the air pathway) since people require wells or surface water.**

Results are shown in Table 5 for the rule: "Observed release, population greater than 100 and (near) maximum toxicity, persistance, and quantity in any one pathway produces an NPL site--failure to satisfy these conditions does not."

The two sites not satisfying this rule are of particular interest. Alden Mill has the highest score of any non-NPL site, higher in fact than several of the NPL sites, but this is based on "unproven" arsenic content of the waste. This may be why it is an exception to the rule and was not listed. The other NPL site not satisfying the rule is Celtor Chemical. It scores maximum on

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*Numbers may add to more than 17 horizontally, because more than one pathway is considered.

**The population figure used is whatever was mentioned in scoring that pathway at that site.

TABLE 4

SENSITIVITY ANALYSIS FOR 17 NPL SITES

	Parameter Importance				
	1st	2nd	3rd	4th	5th
"Observed release"	16	1	-	2	4
Distance to well or intake/population	-	12	5	1	3
Toxicity, persistence	-	4	11	2	-
Quantity	-	-	1	8	4
Water/land use	-	-	-	3	6
Containment	1	-	-	1	1

toxicity, persistence, quantity and has a population nearby of more than 100, but it is an inferred, rather than an observed, release. It has the second lowest score* of the NPL sites and in fact is lower than the score for Alden Mill. The Celtor Chemical site also scores fairly high on direct contact and is said to be a children's play area on the Hoopa Indian Reservation.**

2.4 Mining Site Characteristics Leading to Listing

In summary the way the Mitre Model treats mining sites can be represented by the equation:

MITRE Model Score	=	Observed Release Score	x	Quantity, Toxicity, Persistence Score	x	Population Score

As illustrated in Figure 2:

- Mining sites almost automatically receive the maximum quantity, toxicity, persistence score based on total amount of tailings, spoils, slag or discharge and on the presence of small amounts (relative to bulk waste) of metals, etc.
- A mining site which is nominated for the NPL will tend to have a maximum score for an "observed release" in at least one pathway (27 of the 31 did) because only sites that have been previously studied tend to be nominated and any concentration measurement above background (no matter how small) constitutes an observed release.
- With maximum scores in these two areas, the total score will be high enough for listing on the NPL unless there are virtually no people in the area.

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*The lowest scoring NPL site is the Mountain View Mobile Homes asbestos site.

**As noted earlier, according to the National Contingency Plan, direct contact and fire and explosion scores are supposed to be used only to determine if emergency attention is needed. Listing is supposed to be based solely on the migration score.

TABLE 5

PERCENTAGE OF SITES SATISFYING THE SELECTION RULE IN THE TEXT

NPL Sites*	94%	(1 site not an observed release, 16 satisfy the rule)
Non-NPL Sites	6%	(13 sites satisfy the rule, 1 does not)

*One NPL site has next to maximum score for one pathway for the toxicity/persistence parameter. Score in this pathway is based on copper rather than cadmium which was used in the other pathway and which would have produced a maximum score. All the others score the maximum in these categories.

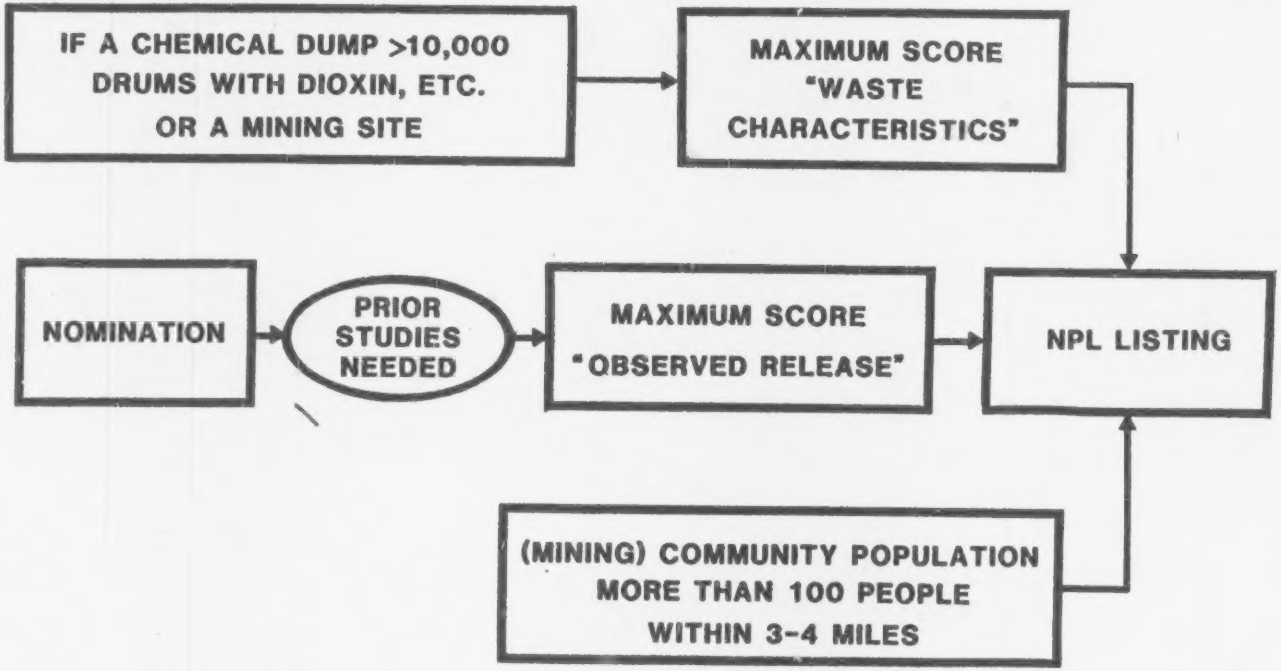
IF A CHEMICAL DUMP >10,000 DRUMS WITH DIOXIN, ETC. OR A MINING SITE
MAXIMUM SCORE "WASTE CHARACTERISTICS"
NOMINATION
PRIOR STUDIES NEEDED
MAXIMUM SCORE "OBSERVED RELEASE"
NPL LISTING
(MINING) COMMUNITY POPULATION MORE THAN 100 PEOPLE WITHIN 3-4 MILES

Figure 2.

NATIONAL PRIORITIES LIST (NPL) OVERVIEW:
MITRE MODEL LOGIC

2.5 Why 14 Sites Were Not Listed

Table 6 presents the specific reasons, in terms of the three factors comprising the rule, why the 14 non-NPL sites failed to score high enough for listing. Results are given only for the highest scoring pathway.

Lack of an observed release and little or no population nearby are the most common reasons for low scores. Of the five cases where quantity and toxicity/persistence scores were not (near) maximum, two of the sites were tram sites and the quantity of waste is actually relatively small. At another two of the five sites the toxicity and persistence scores were based on sulfuric acid and cyanide rather than trace metals in the waste. The toxicity/persistence scores for these substances are not maximum, as they are for metals. Had the scorer selected metals, which are invariably present at some low level, maximum toxicity/persistence scores would have been achieved.

TABLE 6

REASONS WHY 14 MINING SITES NOMINATED WERE NOT SELECTED FOR THE NATIONAL PRIORITIES LIST PROPERTIES OF HIGHEST SCORING PATHWAY

SITE NUMBER	NO OBSERVED RELEASE	LESS THAN (NEAR) MAXIMUM QUANTITY AND TOXICITY	POPULATION LESS THAN 100 WITHIN 3-4 MILES	OTHER
18			X	X(1)
19			X	
20			X	
21	X			
22			X	
23	X			
24	X			
25		X	X	
26	X			
27	X	X(2)		
28	X	X(3)		
29	X	X(2)		
30		X(4)		
31	X		X	
TOTAL	8	5	6	1

(1) "Unproven Arsenic Content of Waste," see text.
(2) Tram site
(3) Based on sulfuric acid not metals.
(4) Based on cyanide solution not metals.

3.0 VALIDITY OF THE MITRE MODEL PROBLEM STATEMENT

Assessment of the validity of the Mitre Model problem statements is preliminary since only information which could be immediately obtained was used. Furthermore, no site visits were made as part of the Mitre Model analysis. Nevertheless, for several sites information was obtained at odds with the Mitre Model problem statement.

3.1 Inconsistencies for the 17 NPL Sites

Areas of inconsistency for the most important pathway include:

1. Measurements which indicate concentrations below Federal or State criteria or standards at the location of exposure (6 sites, numbers 1, 3, 5, 8, 15, 16).
2. Drinking water aquifer not penetrated by "observed" release (2 sites: 13, 14).
3. Population upgradient from ground water contamination source (2 sites: 4, 16).

Although the present lack of high concentrations or aquifer contamination does not assure that contamination will not occur in the future, this information as to present conditions is obviously germane to setting priorities. Further, some sites are sufficiently old that if drinking water contamination were possible it probably would have occurred by now.

3.2 Validity of Model Application to Mining

We have concluded that the Mitre Model is not a useful tool for assessing or ranking hazards at mining sites because the score is produced by site characteristics which have little to do with the actual hazards at the site.

After reviewing the 31 sites nominated for the National Priorities List, the authors of this report are convinced that what distinguishes NPL sites from non-NPL sites is not primarily degree of hazard. Rather the distinction is based mainly on how much prior study has been done at a site and how rural the surroundings are. It could be argued that both of these factors correlate to some extent with degree of hazard. This may be true in some instances but such an indirect measure of hazard could be misleading in many circumstances. A direct measure of hazard would require explicit consideration of the concentrations to which people may be exposed.

Further, reviewing the EPA descriptions of the NPL sites furnished at the time of listing, together with the Mitre Model scores for each site, produces a distinct impression of randomness in the model results. Often the Mitre Model identifies the main problem as being something totally different than found in the site description or in prior (and more thorough) studies--a site commonly believed to have surface water impacts is listed because of air impacts, etc.*

As has been noted, special characteristics of mining sites that contribute to high Mitre Model scores are the large amounts of waste involved and the presence of trace metals in the waste. These characteristics tend to produce maximum scores in one of the three scoring areas--ground water, surface water, or air. Thus, scores in the other two areas which are too small to produce listing at a chemical dump may be sufficient to list a mining site.

The Mitre Model seems to have been developed with chemical dumps in mind. In that context its scoring system may be more useful. For example, maximum quantity of waste may indicate more than 10,000 drums of chemical present rather than, as for mining, more than 2,500 tons of spoils, slag, or tailings and whereas maximum toxicity at a chemical dump may indicate presence in concentrated form of very toxic or carcinogenic compounds, mining sites generally contain only the normal elements in the earth at the site.

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*This raises the question as to what extent, if any, Superfund money needs to be spent on items responsible for listing as opposed to other items at a site.

3.3 General Deficiencies in the Mitre Model

Deficiencies in the Mitre Model not specific to mining sites have been raised by a number of commentators, most recently by Congressional Office of Technology Assessment (OTA).* We repeat the gist of their three main points here because they seem particularly appropriate in light of our review of the 17 NPL mining sites:

1. "The score for hazard potential is based on only the most hazardous substance in the site rather than a composite of all constituents. In contrast, all substances are used to quantify the magnitude of this hazard..." (That is quantity is scored on the basis of all substances present).
2. "Low-population areas will tend to receive a lower score than high-population areas using the HRS, making it less likely that CERCLA funds for remedial action would be allocated to sites in these mostly rural areas, without regard to the relative number of persons actually exposed and the nature of the hazard. One major component of the HRS is based on the size of the population served. If 100 or fewer persons are being served by a threatened water source, the score would be less than if a larger number of people were involved. While it is reasonable to expect that those sites near urban centers may present a threat to large numbers of people, this is not always the case....:"
3. "Following a release from a site, however, distance to an exposure point has only marginal significance for the degree of hazard posed. Because of the mobility characteristics of contaminant plumes within ground water aquifers, it is possible that a well located 3 miles from a site could have higher concentrations of hazardous constituents than a well located only 2,000 ft from it. The important factor after constituents have been released to the environment is whether direct evidence of contamination exists at any exposure point...."

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*"Technologies and Management Strategies for Hazardous Waste Control," U.S. Government Printing Office, Washington, D.C. 20402, March, 1983, pg. 383.

Extending the argument of the last point, that concentration measurements at exposure locations are the best evidence of hazard, OTA raises the "general criticism" that no provision exists for incorporating additional technical information about a site beyond what is asked for by the Mitre model. For mining sites it is likely that waste composition and concentration in the environment comprise the two most important categories of additional information. This is because, unlike some chemical wastes, toxic materials in mining wastes are generally present only in very low concentrations.

EPA has already stated (FR 47, 137, 1982) that composition information was not used because they had been unable to develop a consistent approach for both sites where definitive information exists and sites where it does not. Similarly, they took the position that concentration data was frequently unavailable and that it would be unnecessarily expensive and time consuming to require it at each site (as well as noting other difficulties in data collection and interpretation). However, as noted previously, all the mining sites listed had concentration measurements since all had "observed releases" above background. Thus the data is generally available and could be utilized.

Alternatives to the Mitre Model which draw valid comparisons between sites with different kinds of information, particularly waste composition or concentration information, do not presently exist. However, it seems to us, as it apparently did to OTA, that development of a simple methodology to do this should not be an insurmountable task. One way to do this is to permit branches in the scoring logic depending on the answers to questions such as: "Do ambient concentration measurements exist?" or "Can waste composition be estimated for maximum toxicity compounds?" In this way ~~full~~ information about a site could be utilized. Alternatively a different methodology could be developed specifically for mining wastes. The major change from the present form of the Mitre Model should be in the "Waste Characteristics" scoring area to take into account the special character of mining wastes, i.e., large quantities of waste with low concentrations of toxic materials.

4.0 SUMMARY AND CONCLUSIONS

This analysis has examined the process by which mining related sites were nominated and selected for the National Priorities List (NPL) and possible remedial action under Superfund. Principal conclusions of the study are as follows:

1. Since appreciable Mitre Model scores can be developed only for sites with sufficient previous study, only well known sites are nominated for the NPL. This may be true even for sites that have been studied for reasons not scored by the Mitre Model.

2. Sites which have been previously studied and are nominated are likely to have concentration measurements at or near the site above background. (This was true for all of the 17 NPL sites studied in at least one pathway). This automatically gives a site the maximum score in one of the three major scoring areas.

3. Mining sites also are likely to receive a maximum score for waste characteristics, the second major scoring area based on maximum scores for quantity, toxicity, and persistence of waste. Each of the 17 NPL sites scored maximum or next to maximum in these categories. Since toxicity and persistence are scored based on any measurable component, relatively small amounts of metals produce as large a score as would dioxin in a chemical dump. Since quantity is based on total amount of spoils, tailings, slag, or water discharge, the score is a large as for 10,000 drums or more of chemicals in a waste dump.

4. The third and last scoring area relates to the population within 3 or 4 miles. With maximum scores in the two previous areas the total score will be high enough for testing unless there are virtually no people in the area. If there are more than 100 people then, the overall score for a mining site will be large enough for the site to be placed on the proposed NPL. This is not a large population in view of the fact that mining, including smelting and refining, like other economic activity requires a workforce who may reside locally with their families.

5. Because of the preceding facts it is possible to predict, with a high degree of accuracy, whether or not a mining site will be listed by using the rule "observed release, population greater than 100 within 3 or 4 miles, and (near) maximum toxicity, persistence and quantity (in any one pathway) produces listing--failure to satisfy any one of these conditions does not."

6. Mining sites tend to receive maximum scores in one of three major scoring areas because of the quantities of waste involved and the presence of trace metals. Thus, scores in the other two

areas which are too small to produce listing at a chemical dump may be sufficient to list a mining site.

7. Only a preliminary review of the actual situation at the 17 mining sites proposed for the NPL has been possible, however for at least 9 sites there is crucial information which was not used and which provides a totally different perspective. Specifically:

   - concentration measurements below applicable standards

   - evidence that the drinking water aquifer is not penetrated by the observed release

   - ground water flow away from any population

   For some of the remaining 10 sites there may also be information contradicting the Mitre Model analysis but it was not available to us.

8. The Mitre Model is not valid for mining site application. It cannot be. The purpose of the model is to indicate degree of hazard or risk yet for mining sites high scores are produced by factors unrelated to any direct measures of hazard. Again this situation comes about largely because of the "bias" in the Mitre Model against the typical mining waste, i.e., large quantities of waste with the presence of trace metals.

9. Since mining sites may be among the most expensive to fully remediate by removal when there are extensive worked areas or large amounts of tailings, it is important that assessment of true hazards for these sites use all available information. Alternatives to the Mitre Model which incorporate information about waste composition and ambient concentrations are particularly needed for a valid treatment of mining sites.

STATEMENT OF EDWARD L. MERRIGAN, COUNSEL, NATIONAL ASSOCIATION OF RECYCLING INDUSTRIES, INC.

Mr. MERRIGAN. Thank you, Mr. Chairman. I appear here today as counsel to the National Association of Recycling Industries, which is the trade association for the Nation's metals, paper, textile, and rubber recycling industries.

The 1,200 companies that are members of this association are not the junkyards of America, as somebody suggested when these proceedings were before this committee last year.

These companies actually produce in the metals area, for example, 30 percent of the raw materials supply of the Nation's iron, steel and aluminum industry; 40 percent of the raw material supply of the copper industry; half of the lead; and 20 percent of the zinc industry's supply.

Consequently, metal recycling is vitally important to the economy of the United States. It is vitally important to the U.S. foreign trade in two ways. These companies export large amounts of recycled metals, or recyclable metals overseas; and by producing these metals here in the United States, they prevent the need to import basic ores from overseas.

Finally, they are very important to the environment, because companies that recycle metals, for example, save energy, they reduce air and water pollution, and they actually help cities and States throughout the country in their fight against both solid waste and hazardous waste problems and costs.

We come before the committee today to ask you two things. With reference to the chemical tax, the feedstock tax, it should not be enlarged to apply to any new recycled metals. Last year, some were talking about subjecting aluminum to that tax; copper to that tax and zinc. We don't think those metals are toxic. First of all, there's been no proven toxicity, and certainly in their recycled form, the industry takes those metals out of the waste stream; it does not put them into the waste stream. Therefore, it would be exceedingly short-sighted for the United States to tax the recycling of those metals.

Recently, just a few months ago, the Environmental Protection Agency ruled that more than 90 percent of the recycled metals are nontoxic. For example, recycled aluminum cans from which we drink, the pots and pans we use for cooking, plumbing pipe that's made of copper—none of those things are toxic, and therefore they are not "chemicals" that should be put on the feedstock list.

Second, we think this tax should not apply to the metals that are already on the list when they are in recycled form. For example, nickel and chromium. Those are some of the most strategic metals that the United States needs in time of national emergency. They're imported 60, 80, 90 percent from abroad and from very dubious sources in some cases, so to tax their recycling in the United States is really exceedingly shortsighted, Mr. Chairman.

Therefore, the recycled metals exemption should apply to the recycled form of those metals, too.

Now, today, under EPA's present procedures, when they find a hazardous waste dump, its technology is simply to move it from here to there, and hope that "there" is a secure place to contain the materials.

Recycling, on the other hand, takes these materials out of the waste stream and reuses them, therefore taking them out of the waste stream. So, in effect, the recycling industry saves Superfund and cities and States millions of dollars in cleanup costs through recycling.

Last, any feedstock tax on recycled metals, Mr. Chairman, would constitute a double tax. If you tax the virgin form of a metal and then tax the metal every time it is recycled, you would tax the material over and over again.

So basically for recycled metal, you would keep adding the tax, and therefore put a double disincentive, or a triple disincentive on the recycler.

Essentially our industry supports the concept of a waste-end disposal tax; that is, a tax should be on disposers. If recyclers dispose waste, they, too, should pay a tax.

However, we don't think that a facility that has to be licensed, like battery breaking facilities, where batteries are recycled, that they should pay a tax when the materials merely arrive for recycling.

Also in the administration bill, Mr. Chairman, they would tax the exportation of hazardous waste materials. While that might apply to some hazardous waste materials, it certainly should not apply to recycled aluminum, copper, lead, zinc, or any of the metals that are recycled, here and exported from this country.

Consequently, we urge the committee to consider favorably the two amendments that are attached to this statement, and to add those to whatever bill the committee finally approves this year.

Thank you, Mr. Chairman.

[The prepared statement follows:]

STATEMENT OF EDWARD L. MERRIGAN, COUNSEL, NATIONAL ASSOCIATION OF RECYCLING INDUSTRIES, INC.

SUMMARY

1. The metals recycling industry, which supplies 30% of the nation's iron, steel and aluminum; 40% of its copper; half of its lead, and 20% of its zinc is vitally important to the economy, U.S. foreign trade and the environment.

2. Consequently, when Congress enacted RCRA to regulate hazardous wastes, it simultaneously enacted a series of RCRA statutory mandates aimed at (a) maximizing recycling and (b) removing all burdensome federal disincentives to maximum recycling.

A. The Superfund Chemical Tax Must Not Be Extended To A New List Of Non-Hazardous Recycled Metals, And An Exemption Must Be Provided For Scarce, Strategic, Non-Hazardous Recycled Metals Already On The Feedstock Tax List.

3. Broad, indiscriminate imposition of Superfund "chemical taxes" or "feedstock taxes" on recycled metals is contrary to RCRA and it would be a self-defeating, counterproductive economic disincentive and restraint on such recycling which cannot be justified because:

(i) Most recycled metals such as the beverage cans from which we drink, the pots and pans in which we prepare our food and the pipes which carry out water supply are not hazardous materials.

(ii) Indeed, just two or three months ago, EPA ruled that since most scrap metal is non-hazardous, it is totally excluded from RCRA hazardous waste regulation, and that the small percentage of scrap metals which might fall within the regulatory regime under certain conditions should be exempt from RCRA hazardous waste regulation pending further EPA study.

(iii) Consequently, recycled metal not subject to EPA waste regulation under RCRA should not be compelled to pay a Superfund "chemical tax" designed to apply to chemicals, chemical compounds, such as acids, chlorides and the like.

4. Baseless imposition of the Superfund "chemical tax" on recycled metals is especially unsustainable because presently metal recycling is the most efficient and effective alternative to EPA's much criticized Superfund "transfer technology", whereby dumped hazardous wastes are simply moved to another location where new, additional Superfund clean-up problems and costs arise.

5. In fact, metal recycling has plainly saved Superfund, cities and states millions of dollars annually in both "transfer costs" and repetitious "containment costs" by recycling materials that would otherwise be dumped.

6. Finally, imposition of the Superfund chemical tax on recycled metals results in double taxation at its very worst, and thus must not be enacted by Congress.

B. While NARI Supports A Waste End Tax On Disposal Activities, That Tax Must Not Be Extended To Metal Recycling Functions Or To The Regular Exportation Of Recycled Metals.

7. NARI generally supports the waste end tax proposals contained in the various bills before the Committee.

8. However, that tax must be restricted to disposal activities; it must not be extended to bona fide, necessary recycling activities or to the regular exportation of recycled metals.

C. Conclusion.

9. NARI urges the Committee to adopt the essential "recycled metal" amendments contained in Appendices "A" and "B" hereto.

STATEMENT

My name is Edward L. Merrigan. I appear before the Committee today as counsel to the National Association of Recycling Industries, Inc. (NARI), the trade association for the nation's metals, paper, textile and rubber recycling industries.

NARI's membership consists of approximately 1,200 companies located throughout the United States. These companies are engaged principally in the industrial recycling of metals and paper recovered from solid waste for reuse as new domestic raw materials, and for exportation to this nation's trading partners abroad.

THE NATIONAL RECYCLING INDUSTRY—ITS CONTRIBUTION TO THE ECONOMY, U.S.-FOREIGN TRADE AND THE ENVIRONMENT

Each year the American recycling industry supplies both the United States and many of its foreign allies with significant portions of their basic industrial raw material needs. In 1984, for example, approximately 30% of this country's iron, steel and aluminum; 40% of its copper; about half of its lead and 20% of its zinc were produced from recycled scrap metal. In addition, important volumes of nickel, chromium, cobalt and other scarce strategic metals were diverted or recovered from the waste stream and recycled for industrial reutilization here at home. Simultaneously, the exportation of recycled materials, which are surplus to U.S. needs, has benefitted both the U.S. balance of payments and balance of trade positions, while it has provided valuable international trade opportunities for American exporters.

Studies made by various federal agencies have repeatedly demonstrated that industrial recycling, properly conducted, enhances the environment in several different ways. Industrial metal recycling, for example—

(1) conserves energy, as well as scarce, depletable virgin resources;

(2) results in far less air and water pollution;

(3) reduces the United States' dangerous reliance on foreign imports of critical virgin raw materials; and

(4) aids cities and states across the nation in their struggle against mushrooming solid waste management problems and costs.

RCRA'S STATUTORY MANDATE FOR FEDERAL ENCOURAGEMENT OF MAXIMUM INDUSTRIAL RECYCLING

Consequently, when Congress enacted the Resource Conservation and Recovery Act (RCRA) to regulate the management of hazardous wastes, it simultaneously enacted a series of RCRA statutory mandates aimed at (a) maximizing beneficial industrial recycling and (b) removing all burdensome federal disincentives to maximum recycling. The preamble to RCRA thus contains the following Congressional findings with respect to recycling, at 42 U.S.C. 6901(c):

"The Congress finds with respect to materials, that—

(1) millions of tons of recoverable material which could be used are needlessly buried each year;

(2) methods are available to separate usable materials from solid waste; and

(3) the recovery and conservation of such materials can reduce the dependence of the United States on foreign resources and reduce the deficit in its balance of payments."

Accordingly, one of the main objectives of RCRA was described by that statute itself to be "the protection of health and the environment and to conserve valuable material and energy resources by . . . promoting new and improved methods of collection, separation . . . recovery, and recycling of solid wastes. . . ." (See 42 U.S.C. 6902(6)).

CONTRARY TO RCRA, HOWEVER, SUPERFUND TAXES ON RECYCLED METALS IMPOSE A SELF-DEFEATING, COUNTERPRODUCTIVE ECONOMIC RESTRAINT ON INDUSTRIAL RECYCLING OF MATERIALS FROM SOLID WASTE

Unfortunately, little has been done by the Federal Government since RCRA was enacted to maximize industrial recycling in the United States. A "recycling investment tax credit", enacted shortly after RCRA became law, was short-lived. Included in the emergency energy legislation of the late 1970's, that very modest credit died with other temporary energy tax incentives in 1982.

In the meantime, in 1980, when the 96th Congress rushed to enact the original Superfund law in the closing hours just before final adjournment of that Congress, it imposed the new Superfund "chemical tax" on such vitally important, strategic recycled metals as nickel, chromium and cobalt without determing whether such taxation was necessary, avoidable, or in the best overall interests of the United States.

Worse yet, in 1984, shortly before the 98th Congress was scheduled to adjourn, the House of Representatives ignored warnings and recommendations for a Superfund recycled metals tax exemption from the House Committee on Energy and Commerce and approved legislation calling for vastly-increased Superfund tax rates and for extension of those increased "chemical tax" rates to a new list of recycled metals consisting of recycled copper, lead and zinc.

Fortunately for the United States and the nation's industrial recyclers, who were still suffering from the effects of a severe economic recession, the Senate refused to be stampeded into approving such exceedingly unwise, counterproductive, self-defeating legislative proposals, again in the waning moments of another Congressional session. Plainly, this was wise for the following reasons:

1. No evidence has been developed or presented to establish that recyclable aluminum, copper, nickel or zinc scrap, for example—or recycled aluminum, copper, nickel or zinc metals produced from recyclable scrap—are "hazardous materials" that should be regulated under the federal hazardous waste statutes.

We all know that recyclable aluminum scrap consists in large part of used aluminum beverage cans from which millions of Americans drink their Coca-Colas and beer. We also know that we regularly drink water from copper pipes manufactured from recycled copper, and eat food cooked in copper pots and pans produced from recycled copper.

Indeed, shortly after the 98th Congress adjourned, EPA confirmed in a rulemaking proceeding, and thereafter in an explanatory letter to this Association, that it had no current intention to subject metal recycling to federal hazardous waste regulatory controls under RCRA or any other statute. That letter stated:

". . . (W)e agree with NARI's interpretation that the recycling of non-hazardous scrap metal . . . is totally unaffected by the . . . [hazardous waste] regulatory regime . . .

". . . Thus, . . . we are exempting [scrap metal] from regulatory control while we continue to study the characteristics of scrap metal and the management practices of the scrap metal industry."

Since recyclable and recycled scrap metals are thus not subject to EPA's hazardous waste regulatory regime, plainly they should not be compelled to bear the burden of a Superfund "chemical tax" assessed by Congress against chemicals and chemical compounds such as acids, oxides, chlorides and sulfates that are clearly subject to EPA hazardous waste regulation.

2. Even assuming, exclusively for the sake of legislative discussion, that a particular recycled metal might somehow, someday be labeled "hazardous" for some isolated reason or in some special situation, it would still be counterproductive, self-defeating and short-sighted for Congress to impose a Superfund tax, or any other ill-conceived economic restraint, on all beneficial recycling of that metal.

Under current Superfund clean-up technology, hazardous waste materials such as chemical compounds discovered in environmentally-unsafe dump sites are merely transferred, at great cost, to allegedly environmentally-safe Superfund disposal sites. That "transfer technology" has been widely criticized by the General Accounting Office, the Office of Technology Assessment and others because it fails to remove hazardous wastes from the waste stream—on the contrary, it retains those wastes in the disposal system by merely moving them from one location to another, with the ever-present specter of recurring Superfund clean-up costs and problems at the new location.

Industrial metal recycling, however, effectively removes metals—including any that might ever be labeled "hazardous" for any purpose in the future—from the waste stream for beneficial reuse. Thus, such metal recycling, properly conducted, must not be foolishly restrained or impeded by Superfund taxation since obviously it operates to eliminate both—

(a) the need to expend Superfund "transfer costs" by annually recycling and beneficially reusing millions of tons of waste materials that would otherwise be dumped, and

(b) the need to expend additional Superfund clean-up costs in all cases where Superfund's "transfer technology" fails after dumped materials are moved to Superfund disposal sites that do not function as contemplated by EPA.

In other words, metal recycling has proved itself to be an established, effective, beneficial environmental alternative to Superfund's dubious "transfer technology". It has plainly saved Superfund millions of dollars annually in both "transfer costs" and possible repetitious clean-up or containment costs, and it will continue to be a viable alternative in the years ahead if the Federal Government will encourage the process, not tax it to death.

Indeed, as a Congressional supporter of metal recycling recently declared: "For what they accomplish and the millions of dollars they save Superfund each year, metal recyclers deserve a Superfund medal, not a Superfund tax!"

3. Finally, Superfund taxation of recycled metals is double taxation, or multiple taxation at its very worst. For example, any metal for which the Superfund tax was paid when it was produced in virgin form, is retaxed each time the metal is recycled. This obviously places metal recycling, which should be maximized as envisioned by Congress in RCRA, at a competitive disadvantage because "double" Superfund taxes must be absorbed in the prices charged for recycled metal that must compete with both its virgin counterpart and recycled metal produced abroad.

LEGISLATIVE RECOMMENDATIONS

NARI urges this committee to report Superfund legislation that does not expand the list of metals subject to the chemical tax, and which exempts recycled metals already on the chemical tax list from such erroneous, self-defeating taxation

In sum and substance, therefore, NARI and its members throughout the recycling industry urge this Committee to approve and report legislation that does not add any new metals such as aluminum, copper, lead or zinc to the Superfund chemical tax list.

There seems to be a growing understanding and consensus on why it would clearly be wrong for Congress to subject these metals, or any of them, to the "chemical tax" at this time, since the Administration bill presented by the President and EPA and bills offered by several other concerned Congressmen and Senators exclude these basic raw materials of the American metals industry from this particular Superfund tax. NARI thus supports this aspect of each of those proposed bills.

In addition, of course, NARI urges the Committee to correct without further delay the plainly erroneous action Congress took at the end of the 96th Congress in 1980 whereby recycled nickel, chromium and other very scarce, strategic recycled metals were included in the original Superfund "chemical tax" list. That error should be corrected by inclusion of the "recycled metals" amendment found in Appendix A to this statement.

Briefly summarized, that amendment would exempt recyclable metal scrap and recycled metal produced from recyclable metal scrap from the "chemical tax" or "feedstock tax" only. As indicated above, all such scrap metal is currently exempt from EPA's hazardous waste regulations, and unless and until some need for regulation is demonstrated and established, plainly metal recycling should not be unfairly burdened by this particular Superfund tax designed for chemicals that EPA is actively regulating under the hazardous waste program.

Sixty percent (60%) to eighty percent (80%) of each of these metals in virgin form is imported from abroad. Thus, only minor percentages of these extremely strategic materials is produced here in the United States, principally through recycling. Thus, it is obviously erroneous for Congress to impair this vitally important domestic production of such strategic materials. The tax should apply only to the imported materials in each case.

The proposed recycled metals "chemical tax" amendment contains an important proviso however. It states that no taxpayer with a site listed on EPA's National Priorities List who fails to comply with an EPA or court clean-up order under RCRA, CERCLA or both, will be eligible for this recycled metals tax exemption during any such period of noncompliance. This proviso, we respectfully submit, will serve as a powerful statutory incentive for the maintenance of clean, environmentally-sound operations throughout the metal recycling industry. It will, therefore, effectively promote the very conditions Superfund itself was designed to attain.

While NARI supports the imposition of a waste end tax on waste disposal activities, that tax must not be extended to necessary metal recycling functions or to the regular exportation of recyclable or recycled metals.

NARI has historically supported the maxim that those who dispose wastes into the solid waste stream must bear the costs of that waste disposal. Thus, even recyclers who dispose waste materials must contribute fairly to any disposal costs for which they are responsible.

However, the waste end tax proposals now before this Committee go too far in that they, inadvertently or otherwise, propose to extend waste end taxes ostensibly aimed at waste disposal only to essential metal recycling activities, and even to the normal exportation of recycled metals.

In this regard, Section 303(a) of the Administration bill proposes to apply the waste end tax to—

(i) "the receipt of hazardous waste at a qualified hazardous waste management unit", and

(ii) "the exportation of hazardous waste from the United States".

Other bills pending before Congress, on the other hand, appropriately restrict the waste end tax to (a) "the receipt of a hazardous waste for disposal at a qualified hazardous waste disposal facility", and (b) do not contain a broad, wholly unacceptable "export provision" applicable to regular U.S. recycled metal exports.

NARI strongly urges the Committee to adopt the latter approach for the following reasons:

1. Battery recycling facilities are the only recycling facilities that presently must be licensed or "qualified" under applicable EPA rules. But, automobile battery recycling is clearly one of the most important and voluminous recycling activities in the United States. Without such recycling at current levels at least, the environmental consequences for this nation—and the effect on the recycling industry, of course—would be serious and severe. Consequently, the mere "receipt" of batteries at such recycling facilities must not trigger the waste end tax.

The tax must apply—in the case of recyclable or recycled metals at least—only when materials are "received for disposal".

2. As demonstrated in the "chemical tax" portions of this statement, several important recycled metals were erroneously exposed to the Superfund "chemical tax" in 1980. Those same recycled metals—nickel, chromium, etc.—must not now be subjected to the waste end tax solely because they are "exported" in normal commercial channels to customers of the U.S. recycling industry overseas. Such "exportation" is not waste disposal in any sense, and thus it would plainly be extremely erroneous for Congress to apply the waste end tax to such regular business activities of obvious benefit to the United States.

An amendment, recommended to correct these waste end tax deficiencies, is attached hereto as Appendix B.

CONCLUSION

We thank you, Mr. Chairman, the Committee and your excellent staff for permitting us to testify before you on this matter of vital importance to our industry. In closing, we urge the Committee to adopt the two amendments attached to this statement on Appendices A and B.

APPENDIX A

PROPOSED SUPERFUND CHEMICAL TAX AMENDMENT

"Section 4662(b) of the Internal Revenue Code is amended by inserting the following at the end of that subsection:

"(7) Recycled Metal—For purposes of this subchapter—

"(A) In General—Except as provided in subparagraph (B), the term "taxable chemical" and the nonferrous metals listed in the table in Section 4661(b) shall not include any recyclable metal diverted or recovered from solid waste for recycling and reuse, or any recycled metal produced therefrom.

"(B) Exception—Subparagraph (A) shall not apply to any recyclable or recycled metal sold by a taxpayer during any period (1) a site for which the taxpayer has responsibility is listed on the National Priorities List published by the Environmental Protection Agency under Section 105 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, and (2) the taxpayer fails to comply with any final order or judgment issued against the taxpayer in any action or proceeding under the Comprehensive Environmental Response, Compensation and Liability Act, as amended, the Solid Waste Disposal Act, as amended, or both.

"(C) For purposes of this paragraph, the terms—

(i) "Solid waste" shall have the meaning provided by Section 1004 of the Solid Waste Disposal Act, as amended.

(ii) "Recyclable metal" means metal scrap and other metal bearing materials diverted or recovered from solid waste for recycling and reuse.

(iii) "Recycled metal" means any metal produced or derived from recyclable metal."

APPENDIX B

PROPOSED SUPERFUND WASTE END TAX AMENDMENT

"Section 4681 of the Internal Revenue Code is amended by inserting the following at the end of that subsection:

"( ) The tax imposed by subsection (a) of this section shall not apply to the receipt at a qualified hazardous waste management unit of any recyclable metal for the purpose of recycling and reuse, or to the exportation from the United States of any recyclable or recycled metal. For purposes of this subsection, the terms—

(i) "Recyclable metal" means metal scrap and other metal bearing materials diverted or recovered from solid waste for recycling and reuse.

(ii) "Recycled metal" means any metal produced or derived from recyclable metal.

(iii) "Solid waste" shall have the meaning provided by Section 1004 of the Solid Waste Disposal Act, as amended."

Mr. JACOBS. Thank you, Mr. Merrigan.

Mr. Thomas for inquiries.

Mr. THOMAS. Thank you, Mr. Chairman.

Mr. Paul, in terms of your preference for taxing, I assume everyone on the panel shares his position in terms of the broad-based or the excise tax?

Mr. PAUL. The American Mining Congress does support clearly first a broad-based tax, and preferably I think in my conclusionary statement we think a single tax if possible. The American Mining Congress as an institution at this time favors what I refer to as the Bentsen-Wallop—not exclusively, but that would be our preference.

However, at this time Senators Bentsen and Wallop are still doing refinements, so I would not like to say that the industry has signed off totally.

Mr. THOMAS. Thank you.

Mr. JACOBS. Thank you, gentlemen, for your contribution to the record.

The committee will stand in recess until such time as is needed to cast this vote and return.

[A short recess was taken.]

Mr. JACOBS. We'll now hear from the final panel, Mr. Robert A. Malone, representing Kennecott, Mr. Edward G. Taylor, representing the Battery Council International, and the Chlorine Institute, with Donald S. Pirkle.

STATEMENT OF ROBERT A. MALONE, DIRECTOR OF ENVIRONMENTAL AFFAIRS, KENNECOTT CORP.

Mr. MALONE. Mr. Chairman, and members of the committee, my name is Bob Malone. I'm director of environmental affairs for Kennecott Corp.

We appreciate the opportunity to comment this afternoon on this important topic, and have submitted detailed written comments for the record.

This statement focuses on the effects of Superfund options on the international trade and competitiveness of the domestic copper industry. The statement also addresses important environmental reasons why the copper industry should not be subject to Superfund taxes.

The facts presented argue strongly that the economic consequences of any Superfund feedstock or waste end tax on this domestic industry would be adverse and substantial.

Copper metal is used throughout our Nation. It's used in industry, it's used in our household, it's used in national defense. Its applications vary from delivering our water, to cartridge and shell cases. It's truly a benign metal.

In 1980, when Congress enacted Superfund, they considered whether copper metal should be taxed, and after careful review of the available evidence, rejected a tax as inappropriate for nontoxic copper metal.

However, since that time, two events have occurred which have raised our concern. Last year, during markup of H.R. 5640, this committee placed copper metal on the list of feedstock substances. The tax rate would have cost the industry more than $375 million over the 5-year period.

Also, EPA has completed a series of studies under section 301 which were discussed earlier today. These studies concluded that copper metal is eligible for Superfund taxation and that the economic impact on the industry would be slight.

Before Congressman Florio's subcommittee, in response to sharp questioning, EPA conceded that their studies did not reflect current realities in the copper industry, and we were pleased this morning to hear Mr. Thomas, Administrator of EPA, also cast additional doubt on the reliability of these studies.

But I would like to highlight one point: In these 301 studies, EPA stated that they found copper present at 48 of the 538 NPL sites, or approximately 9 percent of the sites.

Quite frankly, we were surprised that copper metal was not found at more sites. It's a ubiquitous material, and it's found throughout the Earth's crust.

Looking at figure 4 of my prepared statement, it shows that varying levels in the Earth's crust from 4 to 90 parts per million. And, in fact, copper's detectable limit in soil is about 0.1 parts per million. So, at Superfund sites, it can be anywhere from 0.1 ppm and higher.

But the average level of copper at Superfund sites is approximately 30 parts per million. Now, to put these Superfund copper levels into perspective, we took a sample of Capitol Hill soil, with permission, and found that it averaged 90 parts per million, or 3 times higher than the average copper found by EPA in Superfund sites.

I'd like to turn for a moment to the economics of the domestic copper industry. Last year we commented before Congress on the economic plight that the domestic copper industry is facing. Since that time it has become yet more severe. Last month, Kennecott announced the indefinite suspension of operations at its Utah Copper Division. This is the largest mining and smelting complex in the United States, and its closure will result in the loss of some 8,000 jobs.

The impact will not be just in the State of Utah, but also nationwide. As a consequence of its closure about 15 percent of the domestic supply of copper that will be removed from the market.

The industry itself has been suffering. At the present time, as shown in table A-2 of my prepared statement, 50 percent of our domestic copper mines have been closed, and many analysts feel that many will not reopen. Employment has decreased by over half, and we now stand at about 20,000 jobs.

The five primary copper producers in this country, since 1981, have accumulated a record loss of $3 billion. Part of the problem is in copper prices. In real terms, copper prices are now at depression era levels—at approximately 63 cents a pound, from a high of as much as $1.40 in the late 1960's and early 1970's.[1]

We also have a problem with the copper industry's trade balance, as shown in figure 2 of my statement. In 1975, we had a trade surplus of $50 million. In 1985, the Commerce Department projects that this industry will have a $750 million trade deficit. And it's not just the domestic copper producing industry, but also the copper and brass fabricators who are feeling the pinch from imports.

In a 1-year period, they have seen as much as a 100-percent increase in imports of some copper products.[2] This is an industry that employs some 100,000 people in industrialized areas of the country.

In closing, we would strongly urge this committee to recognize the inability of the domestic copper industry to absorb any future feedstock or waste-end taxes under the Superfund program.

Thank you.

[The prepared statement follows:]

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[1] See figure 1 of my prepared statement.

[2] See figure 3 of my prepared statement.

STATEMENT OF ROBERT A. MALONE, DIRECTOR, ENVIRONMENTAL AFFAIRS, KENNECOTT CORP.

Introduction

Mr. Chairman and members of the Committee, my name is Robert Malone. I am Director of Environmental Affairs for Kennecott.

Kennecott appreciates the opportunity to comment on this important topic. Our statement focuses on the effects of Superfund options on the international trade and competitiveness of the domestic copper industry. The facts presented in this statement argue strongly that the economic consequences of potential Superfund feedstock and waste-end taxes on the copper industry would be adverse and substantial. In addition, there are important environmental reasons why the copper industry should not be subject to Superfund taxes, which are addressed briefly in the appendix to this document.

Recent Economic Developments

Kennecott, the nation's largest copper producer, is part of an industry in crisis. In March of this year, for example, Kennecott announced the indefinite suspension of operations at its Utah facilities -- one of the largest in the world -- an action that idled a total of nearly 8,000 workers. Table A-1 at the end of this statement presents a brief chronology of major events in the copper industry since 1982 with emphasis on the activities of Kennecott. It is grim and discouraging reading; the chronicle of a once mighty but now imperiled domestic industry struggling for survival. Notwithstanding these developments, however, we are confident that, over time, the industry can become fully competitive and rebound successfully. But, we do not have an unlimited capacity to absorb punishing losses, and that is why we need your cooperation now. Our specific recommendations are given at the end of this statement. Relevant background and the reasons supporting these recommendations are given next.

Copper; A Vital Metal

Copper is a vital industrial material, essential to any industrialized economy. Key industrial sectors which use copper include building construction (e.g., plumbing, brass fittings, water heaters, wire), electrical and electronic products (e.g., wiring, power cables, motors, generators), industrial machinery and equipment (e.g., valves and fittings, pumps, air conditioning), consumer and general products (e.g., washing machines, refrigerators) and transportation (e.g., auto radiators, cable harnesses, starter motors, ship propellors).

Copper also has many national defense applications. In unalloyed form it is used as a conductor in all communication and control systems, and advanced weapon systems. Copper and brass are used in all forms of military transportation systems and for cartridge and shell cases and other ammunition components. Because of its military importance, copper is classified as a strategic and critical commodity. Moreover, it is designated as one of four "controlled materials" (others are steel, aluminum, and nickel alloys) whose central management has been essential to past mobilization efforts, and figures prominently in the Defense Priorities and Allocation System.[1]

It is important to note that the United States has abundant reserves and resources of copper, ranking second only to Chile in the Western World. Unlike the situation with many other metals, total self-sufficiency in copper is a viable policy option for the United States.

Copper is Environmentally Benign

Copper metal is environmentally benign. Copper is widely used in applications that involve human contact or exposure, such as jewelry, coinage, cooking utensils, water pipes, etc. Indeed, copper is an essential element for humans. More health problems are caused by a copper deficiency than any toxic action of this metal.

The International Market

Copper is a price-sensitive international commodity produced in several countries of the world. Major producers of primary copper include Chile, USSR, United States, Canada, Zambia, Zaire, Poland, Peru, Philippines and Australia. Much of the copper produced in the developing countries is exported to the industrialized countries for further treatment (smelting, refining) or fabrication and use. There are important exchanges (e.g., the London Metal Exchange (LME) and the New York Commodity Exchange (COMEX)) that establish a world pricing structure reflecting the world balance between supply and demand. Domestic prices, therefore, cannot be set unilaterally by U.S. producers (e.g., increased to cover Superfund tax burdens) without risk of losing market share.

Copper is imported to the United States in a variety of forms including ore concentrates (for subsequent smelting and refining), blister (for subsequent refining), refined (for fabrication), semi-fabricated shapes, copper scrap and as "contained copper" in finished products. The export trade balance is highly sensitive to relative production costs and prices.

The Present Situation Of The Domestic Copper Industry

As noted above, the U.S. copper industry, once the world's largest, is now deeply troubled. Relevant statistics include:

- Approximately 40 - 50% of domestic copper mines are closed, as shown in Table A-2, and it is doubtful that many will ever reopen.

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[1] Federal Register, Vol. 49, No. 147, Monday, July 30, 1984, pp. 30412-30444.

- The workforce in the copper mining, smelting and refining sector has dropped more than 50% to a present level of about 20,000 down from 44,000 in 1979.

- The 5 major domestic primary copper producers have lost an estimated $3 billion dollars between 1981 and the present. Losses at Kennecott alone have exceeded $500 million over this same period. Kennecott is currently losing $15 million per month.

- Beginning in 1982, the U.S. economy has emerged from a painful recession. Domestic copper demand has likewise recovered, but a strong U.S. dollar and overproduction from partially subsidized and government-owned producers in the Third World has kept prices close to depression era levels in real terms. Figure 1 shows the historical evolution of real copper prices from 1930 to 1984. As a recent Commerce Department survey notes,[2]

> "During the first 8 months of 1984, COMEX prices averaged 63.2 cents a pound, down 16 percent from the similar 1983 period and 4 percent below the average 1982 price, a year of deep recession. Although prices recovered slightly late in the year, they remained relatively depressed. In real terms, 1984 copper prices were at their lowest levels in 50 years. Because U.S. producers, for competitive reasons, base their prices directly or indirectly in COMEX, they were forced to reduce prices during 1984. U.S. producer prices averaged about 67 cents a pound in 1984, down 12 percent from the previous year and down about 34 percent from the average price of $1.01 attained in 1980. Throughout the year, domestic and world copper prices reacted only to bearish supply factors and ignored numerous positive developments such as improved demand, (especially in the United States), conflicts in Central America and the Middle East, and political unrest in some foreign producing countries. Such factors have, in the past, tended to support prices."

- The world oversupply of copper (exacerbated by non price-responsive decisions by Third World producers) coupled with the significant increase in U.S. demand, caused foreign producers to seek outlets in the United States. Refined copper imports which, as recently as 1979, were only about 10% of domestic consumption, surged to 26% in 1983 and, according to Commerce Department projections will reach 35.5% in 1989.[3] In 1984, eleven domestic copper producers filed a petition before the United States International Trade Commission (USITC), under Section 201 of the Trade Act of 1974, alleging that refined and

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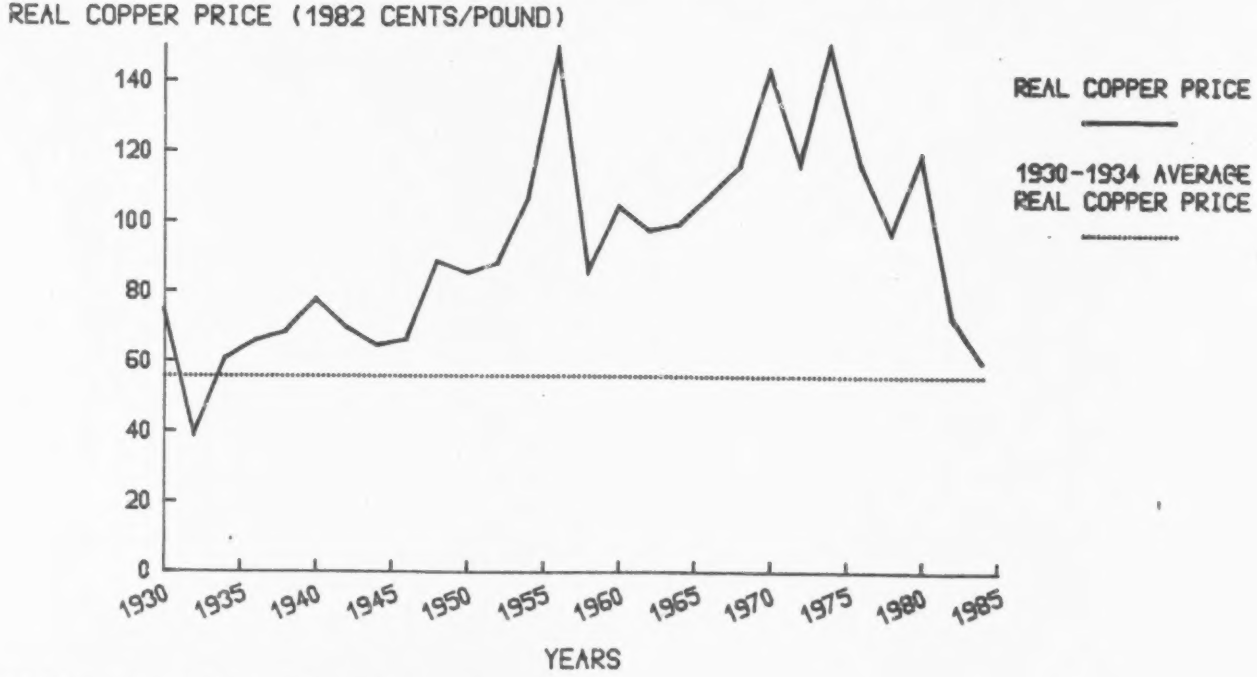
[2] U.S. Department of Commerce, International Trade Administration, 1985 U.S. Industrial Outlook 1985, pp. 20-1.

[3] ibid, p. 20-1.

FIGURE 1. REAL COPPER PRICES HAVE DECLINED TO NEAR DEPRESSION-ERA LEVELS IN RECENT YEARS--A MAJOR CAUSE OF THE PRESENT CRISIS IN COPPER.



SOURCE: AMERICAN BUREAU OF METAL STATISTICS (COPPER PRICES EXPRESSED IN $1982 NORMALIZED BY THE CONSUMER PRICE INDEX).

blister copper imports were causing significant injury and requesting quotas to be imposed. The USITC, in an unanimous decision, found that imports were a substantial cause of serious injury to the domestic industry. USITC recommended further that quotas or tariffs were an appropriate remedy. Although President Reagan chose not to act on these recommendations for other reasons, the USITC finding of injury was not disputed. Copper imports, exports and balance-of-trade data are given in Figure 2. As can be seen, trade deficits in refined copper have greatly increased since 1975.

- Likewise, domestic copper and brass fabricators have experienced sharply increased competition from imports. Imports of copper mill products in 1984 averaged nearly 39% more than those in 1983, while copper alloy imports, including brass mill products, were up 47% over this same period.[4] Figure 3 shows the percentage increase for the various copper and brass mill products. For some of these products, 1984 imports were nearly twice 1983 levels. This year, copper and brass fabricators have filed a series of "anti-dumping" and "countervailing duty" petitions before the USITC, a move which reflects their growing concern over the trade balance in copper fabricated products.

- The domestic copper industry has responded with a vigorous program of rationalization and modernization. By closing unprofitable mines and implementing cost saving measures the domestic industry has lowered production costs by 18% between 1981 and 1984, according to estimates made by the U.S. Bureau of Mines. Kennecott's cost reductions have been even more dramatic. Impressive as these gains are, they have not been sufficient to offset the precipitous decline in copper prices during this same period, nor prevent further curtailments in domestic operations.

While some analysts point out that the "fundamentals" (i.e., demand/supply balance, inventory/consumption ratios) point in the direction of a recovery for the world copper industry (and, indeed, prices have increased slightly in the past month), others believe that the outlook for the domestic industry is for a continued struggle. The Department of Commerce most recently noted,[5]

> "The prospects for the domestic copper-producing industry are negative. U.S. producers have been adversely affected by the events of the past few years, especially by the effects of low price levels. These producers have incurred substantial losses, and have been forced to increase their debt burdens. In addition, domestic producers will continue to face costly environmental regulations and competition from foreign producers, whose production policies, at times, tend to ignore weak market conditions. In the absence of a significant and sustained increase in price, total production could fall about 15 percent, and primary production could decline about 28

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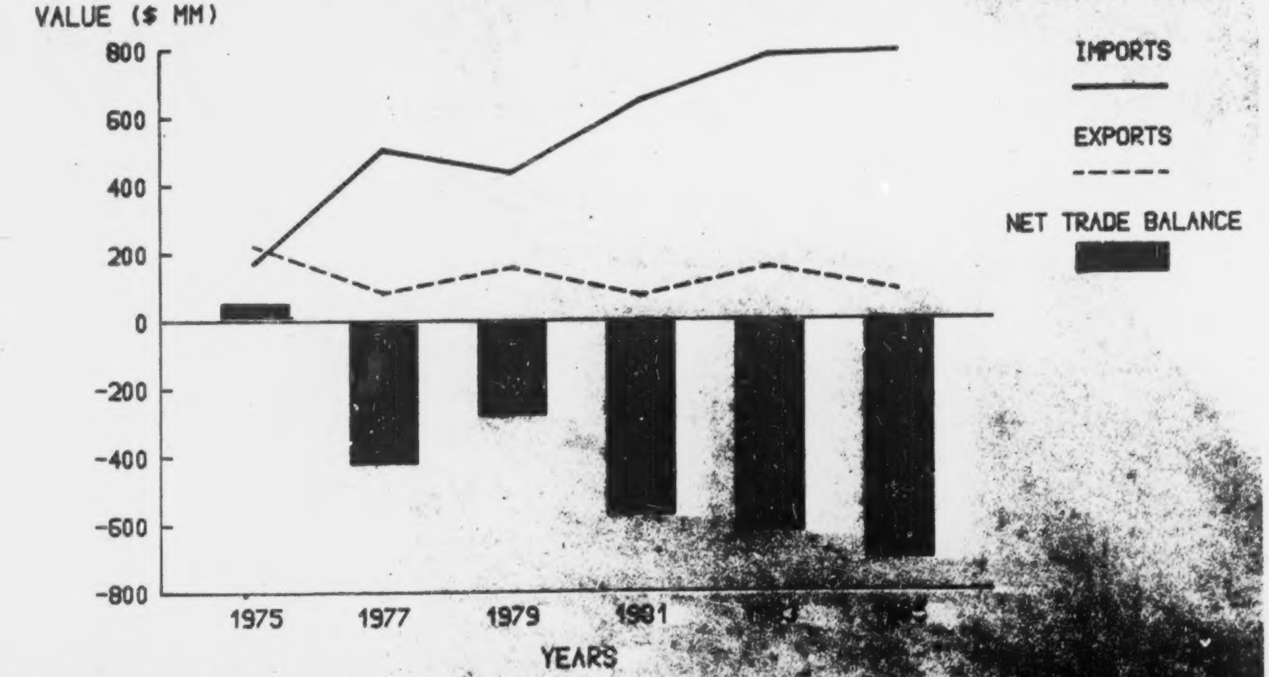
[4] Data from the Copper and Brass Fabricators Council, Washington, D.C., February 6, 1985.

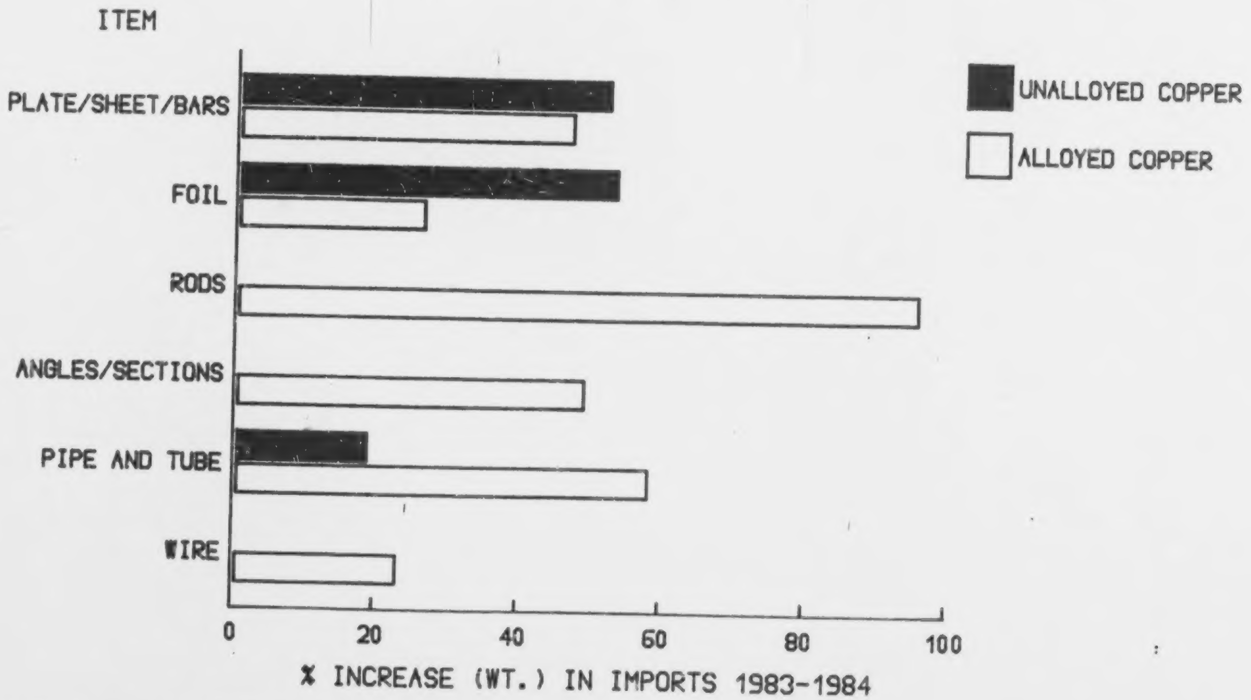
[5] U.S. Department of Commerce, International Trade Administration, 1985 U.S. Industrial Outlook 1985, pp. 20-3.

FIGURE 2. U.S. IMPORTS, EXPORTS, AND NET BALANCE OF TRADE IN PRIMARY COPPER SHOW SUBSTANTIAL TRADE DEFICITS IN RECENT YEARS



SOURCE: DEPT. OF COMMERCE DATA, AS GIVEN IN VARIOUS ISSUES OF "U.S. INDUSTRIAL OUTLOOK". 1985 DATA ARE DEPT. OF COMMERCE ESTIMATES.

FIGURE 3. PERCENTAGE INCREASE IN THE IMPORTS OF COPPER AND BRASS MILL PRODUCTS FROM 1983-1984



SOURCE: COPPER AND BRASS FABRICATORS COUNCIL, INC., WASHINGTON, D.C., FEB. 6, 1985.

percent by 1989. It is likely that domestic producers will permanently close their highest cost facilities and concentrate their cost reduction efforts at their most efficient operations. Imports are expected to increase significantly and could account for more than 35 percent of consumption by the end of the decade. "

Three clear points emerge from the above.

- The very survival of this strategically vital domestic industry is at stake. The United States has moved from an historical position of over 90% self-sufficiency in copper to one of progressively greater import dependence -- a situation not brought about by a lack of natural resources, but rather from a failure of policy.

- Both primary producers and fabricators are facing intense foreign competition and the balance of trade has deteriorated alarmingly in recent years.

- Any additional economic burden that would result from imposition of Superfund feedstock, or worse, waste-end taxes, would be counterproductive. Funds badly needed for further modernization to improve the industry's competitiveness would be diverted, and the decline of a vital industry will be hastened.

Copper And Superfund: The Present Situation

In 1980 when Superfund was enacted, Congress considered whether copper metal should be taxed under Superfund. After a careful review of the available evidence, Congress rejected such a tax as inappropriate for non-toxic copper metal, and instead placed a feedstock tax on three potentially hazardous copper compounds (i.e., cupric oxide, cupric sulfate, and cuprous oxide) which are only produced in small quantities (less than 1%) relative to copper metal. These chemicals are not a byproduct of primary copper production, but rather manufactured by a distinct industry.

Adverse Developments

As the time for reauthorization of Superfund draws near, there are four developments which could adversely alter the present situation:

- Last year's House legislative bill (i.e., HR 5640 which passed the House in August, 1984 and which may be reintroduced in this Session) added copper metal to the list of taxable feedstocks to raise additional revenue without addressing the economic impacts on the industry -- despite Congress's earlier findings against taxing copper metal -- and at tax rates that would cost the industry more than $375 million over a five year period. Two House bills in this legislative session -- HR 1775 (Representative Moore) and HR 2022 sponsored by Representative Sikorski -- using the feedstock list from H.R. 5640 call for copper metal to be taxed as a feedstock.

- H.R. 5640, as sent forth to the House Ways and Means Committee, did not include copper in the list of taxable feedstocks. The Ways and

Means Committee, searching to find additional sources of revenue, added copper and, inexplicably, deleted aluminum. These actions were taken during a brief markup period and did not reflect any considered evaluation of economic impacts, relative toxicity or other relevant aspects of the decision. Taxing copper while exempting aluminum, its chief competitor, creates a competitive imbalance. Kennecott does not believe that aluminum should be taxed -- but neither should copper or other environmentally benign metals.

- Some Senate legislative proposals have been offered that would impose waste-end taxes which, depending upon the bill and its subsequent interpretation, could cost the domestic copper industry from $37.5 million to $102.2 million over a five year period. This may not reflect Congressional intent, as mining wastes are exempted in each of these bills. Nonetheless, EPA has proposed a "reinterpretation" of the Mining Waste Exclusion which would reclassify certain smelter/refinery wastes and, thus, make them subject to Superfund taxes.[6]

- EPA has completed a series of so-called "Section 301" studies that erroneously conclude that copper metal is eligible for Superfund taxation based on the mere presence[7] of copper at Superfund sites (without regard to its mobility/toxicity/hazard), consider waste-end taxes which could cost the industry from $172.5 million to $545 million over a five year period, and finally conclude falsely that the impacts of these taxes would be "slight". In response to sharp questioning, EPA conceded that their "Section 301" studies did not reflect "current realities," but this admission is buried in the fine print of a hearing transcript.[8]

Depending upon the specific option and its subsequent interpretation, Superfund taxes could range as high as nearly 5 cents/pound of copper. Consequently, feedstock and waste-end taxes could significantly harm the U.S. balance of trade in both refined copper and fabricated copper products.

Why Feedstock Taxes Would Harm Competitiveness and The Balance of Trade

Feedstock taxes, if imposed, would apply to domestic refined copper production and imports of refined copper. Such taxes would increase the differential between the U.S. copper price and that prevailing on the world market,[9] creating a two-tier market for refined copper. Domestic copper and refined copper imports to the United States would trade at one price, while refined copper in the world market would trade at a different, and lower price. Given this two-tier price structure, offshore copper fabricators could purchase copper at the lower world price, transform it to copper products that would enter the United States free of any feedstock taxes (e.g., copper tube, wire, semifabricated and fabricated products, and in alloyed forms (e.g., brass mill products, etc.) and thus enjoy lower costs in a business where competitive advantage is figured in pennies per pound.

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[6] 49 FR 42132, October 22, 1984.

[7] Indeed, an analysis of a soil sample from the grounds of the Capitol contained copper at 3.1 times the mean level, and 10.1 times the median value of copper analyzed at NPL sites! The point here is that copper levels at NPL sites are hardly appropriate to justify Superfund expenditures.

[8] Unedited Hearing Transcript, 21 March 1985, before the House Subcommittee on Commerce, Transportation, and Tourism, lines 1016 to 1045, pages 43-44.

[9] A differential exists at present, which only reflects transportation costs to the United States, and a small tariff.

The National Electrical Manufacturers Association (NEMA), testifying in opposition to the petition before the International Trade Commission by primary copper producers in 1984 to provide a quota or tariff on refined and blister copper -- an action that would have created a similar two-tier structure -- offered the following comments.[10]

> "A two-tiered price for copper of this sort -- even if it were only as much as a few cents per pound — would have serious adverse consequences for the fabricating segment of the U.S. copper industry. U.S. producers of copper wire and cable and brass account for over 90 percent of the refined copper consumed in the United States. For these companies -- many of whom might be called metal converters as accurately as metal fabricators -- copper is overwhelmingly the largest cost element. Copper accounts, on average, for about fifty percent of the value of many high volume fabricated copper products (e.g., building wire and magnet wire). The percentage of value-added represented by copper can run as high as 70 percent for some brass products (e.g., copper plumbing tube). Under a two-tiered world price structure, these fabricators would be forced to purchase their chief input at a higher price than their foreign competitors. Given that operating margins are already too low to absorb additional cost increases, the inevitable result is that U.S. copper fabricators would lose market share to foreign fabricators. Foreign sellers of refined copper could not absorb the tariff without engaging in dumping, or lowering their prices worldwide by the amount of the U.S. tariff, an unrealistic assumption. The price gap could only be closed by sufficient imports of fabricated copper products to drive down the demand for, and therefore the price of, domestic refined copper." (Emphasis added)

In an earlier submission, NEMA argued strongly that a two-tier price structure would change dramatically the effective rates of protection afforded various fabricated copper products and upset the carefully crafted tariff structure on these products.[11]

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[10] Wolff, Alan W., et al. "Memorandum in Opposition to Import Relief" submitted to the Trade Policy Staff Committee, Unwrought Copper, Investigation No. TA-201-52, July 26, 1984, pp. 5 et seq.

[11] Wolff, Alan W., et al., "Remedy Brief on Behalf of the National Electrical Manufacturers Association (NEMA)," before the United States International Trade Commission, Unwrought Copper, Investigation No. TA-201-52, June 18, 1984, pp. 18 et seq.

None of these phenomena, incidentally, were considered by the model used by EPA for its analysis of the effects of copper feedstock taxes. As noted in the 301(a)(1)(H/I) report,[12]

> "Because the framework is a partial equilibrium model, it estimates effects on the copper industry, for example, without allowing for changes in other sectors of the economy . . . In addition, the framework does not estimate effects on downstream markets."

This simplified model was used because EPA chose to limit its contractual support work[13] and justified by the glib assertion that . . . "legislative histories . . . appear to indicate that most concern has been expressed over potential first-order effects on metals themselves."

The quantitative effects of this omission are not known with precision. However, NEMA estimated that the potential effects of a 5 cents per pound differential between the COMEX price and the world price (such as would occur from a tariff or a combination of feedstock and waste-end taxes) "would result in at least a 21.7 percent increase in fabricated copper imports over the level of the first quarter of 1984 . . . that volume of increased imports would cost U.S. fabricators $182.9 million in lost sales, and 4,573 jobs would be lost in copper fabricating."[14] To a first approximation, these effects ought to vary linearly with price differential, so, for example, even a 2 cent per pound effective tax would be expected to have a downstream impact of approximately 40% of that cited above. All these impacts are in addition to those on primary copper producers.

If domestic fabricators are injured and effectively lose market share to foreign producers, then so too do producers of primary copper, since the domestic fabricators are their customers.

Why Waste-End Taxes Would Harm Competitiveness and The Balance of Trade

Unlike feedstock taxes which would be levied on both domestic production and imports, waste-end taxes would apply only to domestic production. This tax would place domestic producers at an unfair and significant disadvantage relative to foreign competitors:

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[12] Office of Solid Waste and Emergency Response, USEPA, Impact of Taxing Copper Lead, Zinc Oxide, Fertilizer Feedstocks, Coal-Derived Substances, and Recycled Metals, CERCLA Section 301(a)(1)(H/I) Studies, December 1984, pp. 3-4.

[13] The ICF report, on which the EPA study is based (ICF Incorporated, "Analysis of Substances Exempt From CERCLA Tax Pursuant to 301(a)(1)(I)(H) and Analysis of a Tax on Coal-Derived Substances and Recycled Metals Pursuant to 301(a)(1)(I)," Washington, D.C., November 1983, p. 5 - 3), noted " . . . to analyze potential effects on downstream products would require a comprehensive econometric model beyond the scope of this project." While such economy in government spending is otherwise commendable, these results may have major adverse effects on the copper industry.

[14] Wolff, Alan W., et al. "Memorandum in Opposition to Import Relief," submitted to the Trade Policy Staff Committee, Unwrought Copper, Investigation No. TA-201-52, July 26, 1984, pp. 5 et seq.

- Primary copper producers would be placed at an unfair competitive disadvantage relative to foreign producers in both the domestic and foreign markets since there is no way the wastes of foreign producers would be taxed. They would face the dilemma of either absorbing the tax (and thus increasing their operating losses) or losing market share. Refined copper exports, averaging 105,000 metric tons in 1983 and 1984 according to U.S. Commerce Department data, would decrease and imports would increase if a waste-end tax were imposed.

- Copper fabricators would not escape these effects, because wastes are also generated and disposed in the fabricating process, on which taxes would have to be paid. The trade balance in fabricated products would likewise be adversely affected since wastes generated in the production of foreign fabricated products would similarly be untaxed.

Waste-end taxes could prove extremely costly. In the domestic primary copper industry, for example, nearly 600 tons of rock, ore, and other material are handled to produce one ton of refined copper. Unlike other industries, even modest taxes per ton of waste translate to large taxes on a unit product basis. Moreover, these taxes might not be entirely under the control of Congress. EPA could, merely by reinterpreting or reclassifying wastes as hazardous (as has already been proposed for certain smelter/refinery wastes), effectively alter the tax burden on the industry without congressional review. Waste-end taxes have other disadvantages as well, as shown in Table I. For all these reasons, Kennecott is strongly opposed to waste-end taxes.

The "Section 301" Studies

As the above remarks indicate, the overall economic impact of possible Superfund taxes on the copper industry could be severe. This assessment is markedly at variance with the conclusions reached by EPA in its studies of Superfund taxation options and their impacts on the primary copper industry.

There are important conceptual and methodological flaws in the EPA analysis which invalidate the EPA conclusion that the impacts of these taxes would be "slight." With respect to EPA's economic analysis, the most egregious errors are:

- The analysis in the EPA reports considers feedstock taxes only, even though waste-end taxes are also proposed and EPA is planning to reinterpret the mining waste exclusion for certain smelter/refinery wastes. Consequently the analysis significantly understates the total tax burden on the domestic copper industry.

- EPA's economic analysis uses an overly simplified model which makes unrealistic assumptions (e.g., a perfectly competitive industry), employs out-of-date values for important economic variables, (e.g., demand and supply elasticities) and neglects entirely the effects on downstream industries.

TABLE I.
MAJOR DISADVANTAGES OF A WASTE-END TAX IN THE SUPERFUND CONTEXT

CLASSIFICATION	BRIEF DESCRIPTION
INEQUITABLE	1. It would create an unfair economic advantage favoring imported products (untaxed by this scheme) over domestic equivalents (subject to the tax). 2. Absent some "degree-of-risk" provision that would attempt to rank the relative toxicity of different waste-streams, the tax would be unfair to producers of high volume, low toxicity wastes. The quantification of degrees of risk may present an administratively infeasible task.
UNRELIABLE	3. GAO studies of state-implemented waste-end taxes have indicated that states (1) have not collected the revenues that were anticipated and (2) have not determined if the tax achieved its objective of encouraging more desirable waste management practices. 4. Those firms with economically viable technological alternatives to reduce waste volumes will do so — and while this may achieve a desirable social goal it does not produce consistent funding. There is thus a tension among objectives. As GAO noted, there are "conflicting objectives inherent in many waste-end tax systems. The more successful the tax is in achieving its objective of encouraging more desirable waste management practices the less successful the tax will be in raising needed revenue."
PERVERSE INCENTIVES	5. It may encourage illicit waste disposal and intentional under-reporting of waste generation rates.
POTENTIAL FOR ECONOMIC DISLOCATION	6. Establishing statutory tax rates on categories of waste without regard to product value or economic impacts may create severe and unanticipated economic dislocations.
ADMINISTRATIVE DIFFICULTIES IN IMPLEMENTATION	7. The 1980 Senate Committee report on CERCLA observed that far fewer companies (1,000) would be subject to feedstock taxes compared to a possible 260,000 waste generators who might be covered under a waste-end tax. 8. The objective of simplicity suggests that RCRA and CERCLA should not be intermingled. Such a procedure could impede the functioning of both. RCRA already has in place a satisfactory system of regulations and incentives to reduce and control present and future waste generation. CERCLA should be utilized as it was intended — to provide fast, efficient, and cost-effective cleanup of abandoned sites.
UNEVALUATED	9. There has been no comprehensive assessment of the economic impact of waste-end taxes across varying industries. Absent such analysis, there is not a sufficient basis for rational decision-making. 10. Waste generation rates per unit of useful product vary tremendously among industries. Any across-the-board tax rate is likely to have vastly different (and presently unknown) effects on the respective industries. 11. With respect to the non-ferrous mining and metals industry, waste-end taxes in the amounts proposed in earlier bills could reach truly extraordinary proportions.

No useful conclusions can be drawn from the EPA analysis. Moreover, this view is not ours alone. The U.S. Department of Interior, Bureau of Mines was unusually blunt in its criticism of the EPA report, noting that[15] "there are many serious shortcomings in the EPA economic analysis and, therefore, the findings cannot be accepted." Specific shortcomings of the economic analysis noted by the Bureau of Mines include many of those noted above, and, additionally:

- The EPA analysis assumed that there is no co-production of copper, lead or zinc. In fact co-production needs to be considered since the tax on one substance will affect the production and economics of its co-product.
- The EPA report, using pre-1970 data, failed to recognize the major changes in the structure of the world copper industry that have occurred in the past decade. These changes include the emergence of foreign government-owned producers, development of substitutes for copper, the dramatic rise in energy costs and changes in the cost structure of the industry. Collectively these factors act to increase the economic impact of Superfund taxes on the copper industry.
- The EPA report fails to recognize the current crisis in the industry. As USBM stated "The revenue losses under the various tax rates . . . (considered in the report) . . . are not trivial for those U.S. copper firms presently facing major financial difficulties and for firms in the other industries as well. More specifically, the impact of a two and three percent excise tax on value is quite significant for the domestic copper industry where profits have been negative for the last four years, and especially if there are expectations of higher tax levels in the future."
- USBM added: "Taxing the metals and exempting the recycled metals could create a situation in which imported primary metals could possibly flow into the United States untaxed by being characterized as recycled metals. Moreover, a tax applicable on secondary production would only be effective if both secondary refined metal and the content of secondary alloy metal were taxed. Furthermore, recycled metals are used extensively by the chemical sectors where the hazardous waste or toxic problems exist."

In aggregate, USBM noted no fewer than ten significant flaws in the economic analysis alone. Numerous errors in the technical and environmental sections of the "Section 301" reports were also noted by the Bureau of Mines. These flawed EPA reports simply cannot furnish a useful foundation for development of rational policies.

Kennecott's Recommendation

Kennecott strongly urges that Congress not impose either feedstock or waste-end taxes on copper or other environmentally benign metals. With respect to copper, these taxes cannot be justified on environmental grounds, and imposition of these taxes would exacerbate the already significant trade and competitiveness problems facing the industry. We cannot pass on or absorb these taxes and believe that it is unwise public policy to place additional burdens on the copper industry.

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[15] U.S. Department of the Interior, Bureau of Mines, "Comments on EPA Final Report of December 1984 Required Under Sections 301(a)(1)(H) and (I) of the Comprehensive Environmental Response Compensation and Liability Act of 1980," January 1985, p. 6.

APPENDIX
COPPER, SUPERFUND, AND NPL SITES

Introduction

The EPA "Section 301" studies are directed to consider "(A)n exemption from or an increase in the substances or the amount of taxes imposed by section 4661 of the Internal Revenue Code of 1954 for copper . . . , based upon the expenditure experience of the Response Trust Fund."

These studies suggest that copper metal is an appropriate substance for taxation, based on (i) copper's reported or assumed presence at approximately 9% of the NPL sites, (ii) laboratory results on soil and water samples for 73 case studies (assumed to be equivalent NPL sites) showing copper present above detectable limits and (iii) presence of copper at 1 site where remedial action has been taken. Importantly, the EPA stated "The exact number of sites represented by these samples cannot be known." However, using a scoring system based on the frequency of occurrence of various compounds at these NPL sites, the studies calculate that copper's "appropriate" contribution to Fund revenues is 0.67% of the total, equivalent to a $4.25/ton feedstock tax based upon assumed Fund revenues of $1 billion annually.

It is Kennecott's position that there are significant logical and scientific flaws in these analyses which render the conclusions invalid. Some of the more egregious errors are highlighted below.

Kennecott Analysis

- Many of the "Section 301" study conclusions are based on the frequency of occurrence of copper at NPL sites, used as a surrogate for "the expenditure experience of the Fund." In other words, it is assumed that the mere presence of a substance at levels above analytically detectable limits occasions or will occasion remedial action. There is no consideration of concentration, exposure, or toxicity relationships -- all key variables necessary for a rational assessment. Thus, if, for example, both copper and dioxin were the only substances present at a site above detectable limits, copper is assigned a 50% contribution-to-site cleanup costs. This assumption both is naive and unwarranted.

- The detectable limit of copper in soil is approximately 0.1 parts per million (ppm). The copper content in the earth's crust averages between 4 to 90 ppm, dependent upon the type of soil or rock (see following table), so it is likely that most, if not all, NPL sites will contain some copper -- but so too would Yellowstone Park, the Grand Canyon, etc.

- With respect to the reported analytical data:

  There is no consideration of whether a given sample represented a sample of the actual waste material, a sample of contaminated ground water or surface water, or natural background conditions, etc., in the use of these data for definition of copper's contribution to the Fund. Indeed, in EPA's own Section 301 studies: "Caution should be taken in interpreting these findings, however, as information on the sampling procedures, types and locations of samples relative to drinking water supplies are not available." (Emphasis added)

- The 1979, EPA Water Quality Criteria concluded that copper in water was non-teratogenic, non-mutagenic, and non-carcinogenic. Also, the Agency pointed out that ". . . there is much more likelihood of a copper deficiency occurring than of a toxicity developing with current dietary and environmental situations." EPA concluded that the drinking water standard of 1.0 mg/liter (1.0 ppm) was " . . . below any maximum hazard level, even for special groups at risk." (Emphasis added) The maximum level was established for taste considerations and not for any health reason.

- Of the 800 water samples collected and with 718 analyzed for the 73 cases in this study (unknown number of sites but EPA assumed to be essentially equivalent to 73 sites), EPA reported:

  -- 102 samples (14.2%) were below the detectable limit of 0.001 ppm.

  -- 410 samples (57.1% of total) are below 1/20 of the maximum concentration limit (MCL) set by EPA for copper in water.

  -- 687 samples (95.7% of total) are below 1/2 of the MCL set by EPA for copper in water.

Soil sample data from the same sites (page 2-17) indicate:

-- 12 of 320 (3.8%) were below the detectable limit.

-- 166 samples (51.9%) were below 8.9 ppm copper content.

-- The arithmetic mean was reported as 29.3 ppm, not including those samples below the detection limit which if included would reduce the mean concentration.

-- The following data on copper concentration in various rocks and soils are furnished to lend perspective to the NPL sites data:

TABLE 2.
RANGE AND AVERAGE COPPER CONTENT IN VARIOUS ROCKS

Rock Type	Copper Content (ppm) Reported Range	Copper Content (ppm) Average
Igneous rocks:		
Ultramafic	-	15
Basaltic & gabbroic	30-160	90
Andesitic	-	35
Granitic	5-30	15
Sedimentary rocks:		
Limestones	-	4
Sandstones	10-20	(?) 10
Shales & clays	18-120	45
Soils	2-100	20
Phosphorites	10-100	30
Coals	2-40	15

Source: Cox, *et al.*, 1973; "Copper", in D. A. Brobst and W. P. Pratt (editors), *U.S. Mineral Resources*, (USGPO), pp. 163-190.

Indeed, as mentioned in a footnote in the main text, a "grab sample" of soil from the Capitol had copper levels far in excess of the majority of the NPL sites. (See Fig. 4, page A-11).

United States Bureau of Mines Comments

As noted in the main text, the Bureau of Mines has completed an analysis of the "Section 301" studies. Their conclusions generally parallel those above.

With respect to the adequacy of the EPA data bank, the Bureau of Mines commented as follows,

> "Because of a very limited and poor data base on the expenditure experience of the Fund with respect to copper and lead metal and zinc oxide, the EPA conclusions drawn from such data are suspect. The EPA data base cannot be used to determine the following critical components of a comprehensive Fund experience study, which was called for in the Act:
>
> > (a) whether copper metal, zinc oxide and associated substances were present at the 538 NPL sites at toxic levels. Though an attempt was made to estimate the toxicity level for lead and 5 associated substances using National Interim Drinking Water Standards, no such criteria were applied to copper or zinc oxide; and
> >
> > (b) the proportional shares of past and future site cleanup costs, if any, that are directly attributable to contamination by the production activities involving lead metal, copper metal, and zinc oxide, derivative compounds of these metals, and other possible contaminants."

Moreover, the Bureau of Mines commented on the analysis and interpretation of the EPA data,

> "The reader must be presented with more information than 'copper, lead and zinc are among the most frequently detected substances at NPL sites and adjoining environmental media.' Additionally, inferring the possible presence of activities related to metals or their compounds by descriptions of waste sites and types of waste is tenuous for many reasons including the difficulty of determining whether the metals present were primary products or byproducts of other metal production such as gold. Additionally, lead and copper are common substances found in soil, including waste sites. Their presence, therefore, does not prove anything about the industrial source of the metal. Lastly, the assumption that past experience can be used to forecast the future is not necessarily true given the nature of the substances being analyzed.
>
> Given a maximum 4 year study time frame, a data base related to Fund experience should have been developed to adequately estimate the incremental cost contributions to each selected site of each possible contaminant, when applicable. Unfortunately, neither the site frequency data, whether defined broadly or more narrowly, appear to have been collected with this study in mind."

The Bureau of Mines noted that the EPA study did not differentiate between the Fund experience of copper, lead, and zinc oxide. Pooling of site data for these three metals ignores the fact that,

> "(1) the toxicity contributions of copper and zinc may significantly differ from that of lead; and
>
> (2) copper and zinc and related compounds were found far less often than lead in the 538 NPL sites. Copper and zinc and related compounds have been detected at only 9 and 14 percent, respectively, of the 538 updated NPL sites as compared to 30 percent for lead. Copper was not reported at the 4 sites in which remedial actions have been taken for which data are available and in only 1 of the 35 approved immediate and planned removals involving copper, lead and zinc."

In sum, the Bureau of Mines concluded that the EPA studies contained "many serious shortcomings" and "therefore, the findings cannot be accepted."

TABLE A-1.
SELECTED CHRONOLOGY OF EVENTS IN THE DOMESTIC COPPER INDUSTRY WITH EMPHASIS ON KENNECOTT

1982

January	Major work force reductions and mine closures occur throughout the industry.
	Kennecott announces it lost $59 million for the last six months of 1981 -- profits of other copper companies fall dramatically.
February	First Kennecott work force reduction occurs at Utah Copper Division, one of the world's largest copper operations.
March	575 positions eliminated throughout Kennecott.
	Labor reductions begin at other Kennecott operations.
May	Kennecott's Arizona and New Mexico mines curtail all operations except dump leaching and precipitating.
June	Copper prices on the Commodity Exchange (COMEX) drop to four-year low of 63.70¢, later in the month drop as low as 54.15¢ a pound.
	White Pine smelter and refinery in Michigan closed.
July	Kennecott's Utah operations continue work force reductions; now operating at full capacity with 2,000 fewer workers.
	All Kennecott salaried employees take 10% pay cut (for one full year) and are asked to give up two weeks of vacation during 1982.
August	Magma closes its Superior Division in Arizona.
September	Kennecott's New Mexico facility begins shakedown of new concentrator; smelter modification project approved.
	U. S. copper industry now operating at 66% of capacity.
November	Kennecott closes Tintic Division at Eureka, Utah.
December	Kennecott's 1982 losses total $187 million.
	Chile overtakes the United States as the leading producer of mined copper in the Western World.

TABLE A-1.
SELECTED CHRONOLOGY OF EVENTS IN THE DOMESTIC COPPER INDUSTRY WITH EMPHASIS ON KENNECOTT
(continued)

1983	
January	Kennecott Refining trims production rates.
	Kennecott loses $188.5 million in 1982. Other copper producers also announce big losses; Anaconda, $332 million; Phelps Dodge, $74.3 million; Asarco, $38.7 million.
February	Copper prices gradually improve, topping 75¢ a pound mark on the COMEX.
March	Ozark Lead shuts down on indefinite basis after union rejects wage and benefit reduction package.
	Additional 76 salaried positions trimmed from Kennecott's headquarters.
	Kennecott and unions agree to begin early negotiations on new copper contract.
April	Kennecott sells Tintic Division.
	Agreement reached on economic package for new labor contract.
May	Kennecott President Frank Joklik advocates tighter lending standards for foreign project loans; later incorporated as amendment of the International Financial Stability Act.
June	Kennecott's headquarters payroll reduced by 80 positions.
	Kennecott Baltimore refinery shuts down refining and anode casting operations; only rod casting continues.
	Kennecott's Nevada Smelter shuts down on an indefinite basis, due to lack of available concentrates.
July	Kennecott, unions settle local issues; new three-year contract reached without work stoppage for the first time in almost 30 years.
August	Kennecott's Arizona mine resumes mining and concentrating operations; concentrates sold to Asarco rather than running smelter.
October	Copper prices hit 1983 low at 65.80¢ a pound on the COMEX.

TABLE A-1.
SELECTED CHRONOLOGY OF EVENTS IN THE DOMESTIC COPPER INDUSTRY WITH EMPHASIS ON KENNECOTT
(continued)

1984	
January	Kennecott joins with other domestic copper producers seeking relief from foreign imports by filing International Trade Commission petition.
	Kennecott reduces output at the Bingham (Utah) mine by 13%, and announces a $91 million loss for 1983.
February	Kennecott's Utah Copper Division and headquarters reduce another 500 positions.
	Phelps Dodge loses $63.5 million in 1983; Duval loses $30.9 million; Magma reports loss of $28.4 million; Asarco reports $58.5 million profit.
May	Kennecott requests reopening of labor contracts; Inspiration and Magma follow Kennecott's lead.
June	Kennecott announces it will trim production by 2/3 and lay off 2,000 workers at Utah Copper Division unless labor costs can be reduced.
July	Unions decline to negotiate reductions in labor costs; UCD production cut and work force reduced by 1,800.
	Copper prices drop to 57.70¢ a pound on the COMEX.
September	President Reagan rejects ITC's recommendation for aid to the domestic copper industry.
	Arco announces one-time $785 million write-down of Anaconda assets.
	Kennecott's Chino, New Mexico operation begins change over to new smelting process.
October	Kennecott reports third quarter loss of $41 million, bringing nine-month 1984 losses to $106 million.
	Omnibus Trade Bill including a rider urging the Administration to negotiate with foreign copper producers passed by Congress and signed by the President.
December	Further reductions in fringe benefits announced for salaried employees of Kennecott.

TABLE A-1.
SELECTED CHRONOLOGY OF EVENTS IN THE DOMESTIC COPPER INDUSTRY WITH EMPHASIS ON KENNECOTT
(continued)

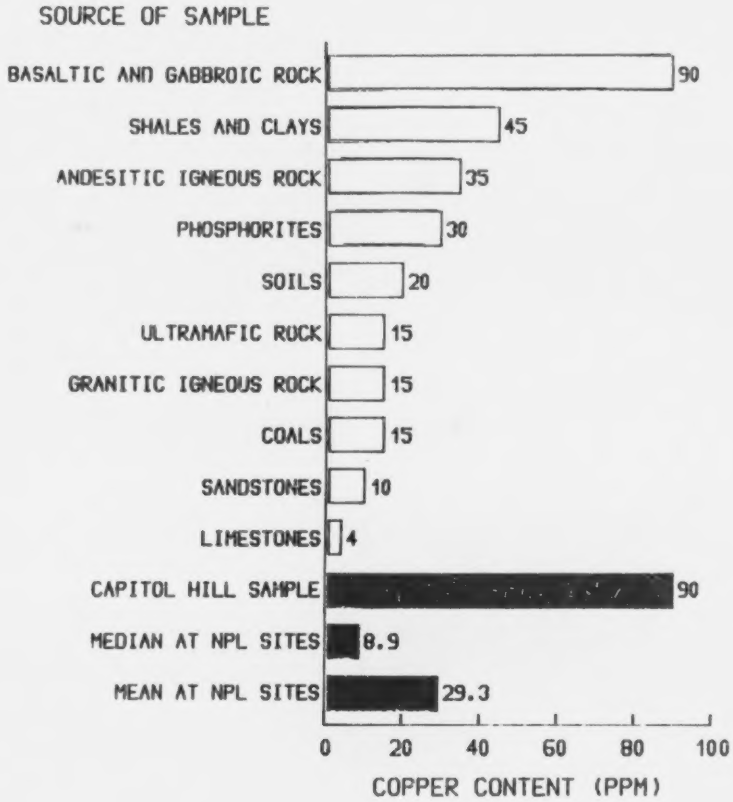
December (continued)	Asarco announces major cuts in headquaters staff.
	Copper prices drop to the 55-56¢ range on the COMEX.
	Kennecott, unions agree to meet in Albuquerque beginning January 14, 1985, to discuss ways of reducing operating costs.
	Phelps Dodge closes Morenci smelter.
1985	
January	Kennecott reduces work force at the Utah Copper Division by 100 employees effective January 6.
	Echo Bay takes over Copper Range, future of White Pine operations doubtful.
	Standard Oil of Indiana announces plan to a spin-off the metals, industrial minerals, and coal operations of its AMOCO Minerals subsidiary. Labor cost-cutting talks collapse.
February	Phelps Dodge enters into a letter of intent with Sumitomo for the possible sale of "a significant minority interest" in the Morenci copper mining property.
	Phelps Dodge and Asarco announce $269 million and $306 million losses respectively for 1984.
March	Senator Pete Domenici and Representative Morris Udall introduce complimentary bills called the "National Copper Policy Act of 1985" designed to bring voluntary production restraint negotiations with foreign copper-producing countries -- no action to date on this bill.
	Senators Domenici and Garn introduced a resolution to terminate the Compensatory Financing Facility of the IMF.
	Asarco permanently halts smelting operations at its Tacoma, Washington, smelter.
	Phelps Dodge suspends operations at its Ajo, Arizona, smelter.
	Kennecott announces the indefinite suspension of operations at its Utah facilities -- one of the world's largest. Nearly 8,000 in total have been laid off at this facility.
April	Slight rise in COMEX prices.
	Congressman Kolbe introduces Domenici/Garn resolution in the House.

TABLE A-2.
DOMESTIC COPPER MINES CURRENTLY CLOSED OR CURTAILED

Property	Owner	Tons/Year Capacity	Date Shut Down
Carr Fork	Anaconda	25,000	Dec. 1981
Esperanza	Duval	20,000	Dec. 1981
Mineral Park	Duval	15,000	Dec. 1981
Christmas	Inspiration	10,000	Jan. 1982
Continental	Sharon Steel	20,000	Jan. 1982
Ray	Kennecott	40,000	Apr. 1982
Copper Flat	Quintana	15,000	Jul. 1982
Superior	Magma	30,000	Aug. 1983
White Pine	Copper Range	45,000	Oct. 1982
Bluebird	Ranchers	7,000	Oct. 1982
Pima	Cyprus	43,000	Oct. 1982
Twin Buttes	Anamax	110,000	Feb. 1983
Berkley	Anaconda	80,000	Jul. 1983
Sacaton	Asarco	20,000	Mar. 1984
Utah	Kennecott	180,000	Mar. 1985
Ajo	Phelps Dodge	38,000	Aug. 1984
Silver Bell	Asarco	20,000	Aug. 1984
TOTAL		718,000	

FIGURE [illegible]

REPORTED COPPER CONCENTRATIONS IN SOIL SAMPLES AT NPL SITES IN PERSPECTIVE



Mr. JACOBS. Mr. Taylor.

STATEMENT OF EDWARD G. TAYLOR, PRESIDENT, BATTERY COUNCIL INTERNATIONAL, AND PRESIDENT, DANIELLE BATTERY MANUFACTURING CO.

Mr. TAYLOR. I'm Edward G. Taylor, president of the Battery Council International, and of Danielle Battery Manufacturing Co. of Baton Rouge, LA, which happens to be in the Sixth Congressional District, represented by the Honorable Mr. Moore.

Mr. Chairman, the primary purpose of the Superfund is to raise revenues needed to clean up sites where hazardous wastes were disposed of incorrectly in the past. An equally important purpose should be to encourage manufacturing processes which are environmentally sound. Above all, the tax should not in any way discourage proper disposal, or discourage environmentally sound recycling.

I would like to examine the existing Superfund tax and several proposals for revision in light of these objectives.

In 1984, the battery industry used approximately 922,000 tons of lead to make automotive and industrial batteries. This is about 70 percent of all lead used in this country. The majority of this lead is recycled lead.

The Bureau of Mines' figures show that the lead recovered from batteries over the last 3 years equals more than 55 percent of all the lead used to make new batteries. This recycling is environmentally sound.

The battery which goes into a secondary smelter for recycling does not end up at a municipal waste site or at the bottom of a local stream.

Let me examine the alternate sources of revenue in this context.

First, the feedstock tax generates funds but it concentrates the economic impact on the using industry and its customers.

It also damages domestic industry if a corresponding tax is not levied on imports. The existing feedstock tax is already placing a heavy economic burden on our industry as the largest customer of the lead industry. We do not believe the feedstock tax should be increased or expanded.

Whether the feedstock tax is expanded or not, we believe it should apply to imported products which contain a significant percentage of a taxed material, or its immediate derivative. It is very easy to determine the weight of the lead oxide in an imported battery.

If the imported battery escapes taxation, this will tip the balance against the domestic manufacturer and to an overseas industry, and the domestic manufacturer already faces significant competition from overseas firms, who do not have our costs of environmental and worker protection. We believe the bill introduced by Mr Moore addresses this issue responsibly and equitably.

We would ask also that any feedstock tax be rebated on exported batteries. Further, we suggest that recycling should be encouraged through a reduction in the tax rate, or a credit to the party which paid the tax. This could be based on the extent on which the industry recycled lead in the most recent year. In most cases, it is the battery manufacturer who initiates a chain of recycling. This contribution to recycling should be recognized. It certainly should not be penalized through increased taxes.

There are of course three alternatives to an expanded feedstock tax: a broad-based manufacturer's tax, general revenues, and a waste-end tax.

We believe that a broad-based manufacturer's tax is the most equitable way to fund any expanded environmental response fund. We would also support continued use of general revenues as a part of the revenue base.

However, we do not support a waste-end tax. While this seems to be a way of focusing the tax on the party who disposes of hazardous wastes, this may not always be true.

The additional cost would put domestic industry at a disadvantage in competing in world markets. A recent Department of Commerce report shows that the U.S. share of world battery production has dropped by 12 percent in the last 5 years.

We need to arrest this trend. Some versions of the waste-end tax, those called a waste generation tax, would actually tax recycling. I think Mr. Merrigan testified on it in a previous panel. Used batteries are technically hazardous materials as defined by RCRA, and a secondary smelter is technically a treatment site. If the receipt of a used battery at a smelter is taxed, incentives for recyling in my industry would be diminished. This is the worst of all possible alternatives.

In summary, we ask that the committee support environmentally sound recycling. We want all used batteries returned to the smelter for recycling, and for competitive reasons in the world market, we ask that the imported product pay the same tax we pay. We appreciate your support.

Mr. Jacobs. Thank you, Mr. Taylor.

Mr. Pirkle.

STATEMENT OF DONALD S. PIRKLE, VICE PRESIDENT AND GENERAL MANAGER, INORGANIC CHEMICALS DEPARTMENT, DOW CHEMICAL, U.S.A., ON BEHALF OF THE CHLORINE INSTITUTE, INC.

Mr. Pirkle. Mr. Chairman, I am Don Pirkle. I am a vice president of Dow Chemical U.S.A. and vice chairman of the Chlorine Institute.

I am here today to represent the Chlorine Institute which has represented the producers of chlorine, sodium hydroxide, and potassium hydroxide for 60 years.

While the testimony I have submitted for the record covers the institute's complete position on the Superfund, I would like to focus today on two issues. First of all, the economic impact of the Superfund on our industry, and second, the improper taxation that currently exists on sodium hydroxide and potassium hydroxide as inorganic feedstock chemicals.

First, let's deal with the economic impact. Chlorine is the third largest chemical revenue producer for Superfund. Our industry pays over 50 percent of all Superfund taxes on inorganic chemicals.

Increases in Superfund taxes will compound the problems that our industry already faces. Demand for our products is virtually flat.

Our industry is running at 75 percent of capacity. We have shut 12 plants down since 1980 and idled 6 additional plants. We have eliminated 2,000 jobs in our industry and we are facing extremely high external cost pressures including high energy costs.

We face increasing amounts of untaxed imports from chlorine and chlorine derivatives, and our exports have diminished.

The industry simply has not been able to pass on any of the Superfund tax to our customers, and we surely could not pass on any additional taxes.

Proposals in the House of Representatives would dramatically impact our industry. Our industry currently pays about $31 million per year in Superfund taxes. H.R. 1775 would increase that to $54 million a year by 1990. H.R. 2022 would increase that to $283 million per year by the end of the decade.

Under H.R. 2022, by 1990, sodium hydroxide would go from a present tax rate of 28 cents per ton to $7.52 a ton, 27 times its current level.

Similarly, potassium hydroxide would increase from 22 cents a ton to as high as $26.21 per ton, an increase of 120 times its current level.

Our industry is presently below break even. We cannot absorb or pass on the added cost of increased Superfund taxation. The Chlorine Institute thus recommends the following guidelines for financing Superfund. We recommend maintenance of the funding level recommended by the EPA at $5.3 billion. We would hold feedstock tax rates at their present level.

We would remove the hydroxides from the feedstock list. We would expand the tax base by reducing the amount of waste with the establishment of a dry weight disposal tax for land and deepwell disposal, as opposed to a wet weight type tax, or tax that would actually tax the treatment of waste.

And finally, if additional revenue is required, a broad-based tax along the lines suggested in legislation that already exists in the Senate, such as the Bentsen-Wallop bill, should be imposed.

We strongly recommend removal of sodium hydroxide and potassium hydroxide as feedstock chemicals. Taxation as feedstocks suggests that they contribute to the hazardous waste problem.

The caustics are actually a part of the solution of the waste problem. They are used to neutralize acids commonly found at waste sites. They are used in air and water pollution control equipment to remove sulfur, and they are even approved by the FDA as food additives.

In response to an inquiry from Congressman James Broyhill, the EPA attempted to set forth their rationale for listing caustics as feedstock chemicals. Our best industry scientists studied the EPA rationale. We analyzed each and every point on which the Agency based its reasoning and we met with the EPA officials to discuss the problem. In that meeting they conceded that their rationale was based on a review of the literature, literally a textbook analysis.

The EPA agreed that caustics contribute to site safety, by neutralizing acids and in some cases sealing up the clay liners beneath the waste site.

In and of themselves the caustics pose no danger to public health. Potassium hydroxide has never been found at any site reviewed under the hazard ranking system or a national priority list site, and sodium hydroxide has been found in only one NPL site out of more than 1,500 surveyed.

Taxing potassium hydroxide and sodium hydroxide ignores the very intent of the Superfund Program. We urge this committee to take the steps necessary to remove the caustics from the list of taxable feedstocks.

In conclusion, the Chlorine Institute strongly supports a renewal of the Superfund program, in legislation that will promote productive cleanup of hazardous wastes at levels recommended by the EPA. Our industry simply cannot afford higher levels of taxation than those that exist in the current legislation We strongly recommend the removal of sodium hydroxide and potassium hydroxide, two chemicals which do not meet the criteria for feedstocks from the EPA. Thank you very much for the opportunity to testify.

[The prepared statement follows:]

STATEMENT OF DONALD S. PIRKLE, VICE PRESIDENT AND GENERAL MANAGER, INORGANIC CHEMICALS DEPARTMENT, DOW CHEMICAL, U.S.A., ON BEHALF OF CHLORINE INSTITUTE, INC.

Mr. Chairman, members of the committee, My name is Donald S. Pirkle. I am Vice-President and General Manager of the Inorganic Chemicals Department of Dow Chemical, USA. I am also Vice-Chairman of the Chlorine Institute, on whose behalf I am presenting this testimony. As you may know, the Chlorine Institute is the 60-year-old trade association representing the producers, packagers and distributors of chlor-alkali products. Chlorine producers now pay over one-half of the total feedstock taxes on inorganic chemicals, and chlorine alone is the third largest chemical revenue producer for Superfund. Our industry, therefore, is especially qualified to present this testimony on the critical financing and funding issues facing the Committee today.

My testimony today will focus on the Institute's primary concerns about the pending reauthorization of the Comprehensive Environmental Response, Liability and Compensation Act (CERCLA): the economic impact of the program on the chlorine-caustic industry, and the improper taxation of sodium hydroxide and potassium hydroxide as feedstock chemicals. Attached to my testimony are additional materials detailing the Chlorine Institute's positions on other relevant Superfund issues.

SUPERFUND'S ECONOMIC IMPACT

The chlor-alkali industry has been in an essentially static position over the past few years. Chlorine-caustic plants have been operating on average at about 75% of capacity for the last ten years. The projected rate of growth in production through the end of the decade is less than the rate of increase in the Gross National Product, exemplifying the difficult road to recovery our industry has been on.

Our industry's recovery has been further delayed by plant shutdowns and layoffs. Since 1980 alone, twelve of our plants have discontinued operations, and another six are partially shut down. Approximately 2,000 jobs were lost as a result of these discontinued operations.

The cost pressures on our industry are especially significant. A study conducted by the Chemical Manufacturer's Association suggests that earnings to sales ratios for chemical producers under CERCLA have been reduced by almost half, contributing to the significant erosion of profits. This situation is directly attributable to costs which cannot be controlled by the producer. For example, energy now accounts for as much as 50 percent of a producer's manufacturing costs. The external pressures on our industry prevent producers from passing costs through to the consumer, and contribute to the further deterioration of our competitive position.

Imports of chlorine derivatives have increased significantly. The imported products are not taxed under Superfund, and do not have to make the price adjustments required of domestic products. U.S. exports have also declined, and we now face the prospect of massive product substitution on a worldwide basis as consumers purchase lower priced, untaxed goods.

It is evident, then, that any increase in the feedstock tax rates will compound the economic pressures facing the chlor-alkali industry, and will further impede our ability to remain competitive. Clearly, the potential exists for a worldwide disruption of supply and demand patterns, forcing U.S. based industry into yet another trade disadvantage.

Since 1980, the U.S. chlorine-caustic industry has paid nearly $155 million in feedstock taxes, or roughly $31 million a year. Last year's reauthorization bill in the House of Representatives, H.R. 5640, would have increased our tax charges to some $178 million a year by 1990. Congressman Sikorski's recently introduced bill, H.R. 2022, would tax our industry at the rate of $282.7 million by the end of the decade. We cannot absorb a feedstock tax increase of that magnitude, however. Our industry is literally at or below the break even. We are beyond the point of being able to pass these tax increases on to our customers. We are, indeed, at the breaking point.

There are several methods which we recommend might be employed to ease the inequitable tax burden now carried by the basic chemicals industry. First, overall CERCLA spending should be maintained at the level EPA has testified it can productively spend in carrying out the Superfund mission. A dry-weight disposal tax assessed on land disposal of wastes would accelerate the solution to the problem. Sodium hydroxide and potassium hydroxide should be removed from the list of feedstock chemicals. And if revenue beyond that raised by the current feedstock schedule and a waste disposal tax are required, we believe Congress should consider a proposal to broaden Superfund's revenue base.

There are several reasons why we believe this Committee should look to a broad revenue base, if so required. First, a broad based tax recognizes a rational link between business in general and the hazardous waste problem. Although the chemical industry does manufacture the products that sometime end up in waste sites, we do not encourage irresponsible disposal practices nor do we benefit from such practices.

More importantly, a Superfund tax imposed on all sales—such as a modified value added tax—can be kept low. No one sector of our economy will be unduly burdened by the tax. Our trade deficit need not deteriorate, as untaxed imports, which surely make some contribution to the Superfund problem, can be taxed under such a system while exports can be exempted. And a broad based tax recognizes that every American benefits by having the risk of exposure to hazardous waste reduced. Due to the broad revenue base inherent in such a proposal, very small payments from a large number of contributors would provide substantial revenue for the Superfund cleanup program. The simple guidelines for financing which I have outlined can ensure a Superfund program that is fair, easy to administer, and less economically burdensome to the industries involved. The Chlorine Institute urges this Committee's favorable consideration of methods designed to spread the financial responsibility of CERCLA, away from the present reliance on the basic chemicals industry.

THE CASE FOR REMOVING SODIUM HYDROXIDE AND POTASSIUM HYDROXIDE AS FEEDSTOCK CHEMICALS

Under current law, sodium hydroxide and potassium hydroxide are taxed at $0.28 and $0.22 per ton, respectively. The CERCLA reauthorization bills already introduced in the House would increase the feedstock tax rate for potassium hydroxide by as much as 120 times the current rate; sodium hydroxide would be subject to a tax 27 times the current rate. The chlor-alkali industry cannot accept such an increase in the feedstock taxes imposed on these two relatively non-toxic chemicals.

It is our firm belief that the hydroxides (also known as caustics) are improperly considered feedstock chemicals. In fact, members of our industry recently met with officials of the Environmental Protection Agency to discuss the Agency's rationale for listing the hydroxides as feedstocks. At that meeting, EPA conceded that it derived its listing rationale from a review of the available literature—a textbook analysis that ignored the realities of caustic production, use and disposal. More importantly, EPA agreed with the study conducted by some of our best industry scientists that the hydroxides actually improve the impermeability of clay liners used at landfills, and that it is desirable to have a landfill in an alkaline rather than acidic condition. Less than one percent of total caustic production is used in catalysis, acid neutralization and caustic extraction processes in the production of chemicals that have appeared at waste sites. However, the caustics form no part of the final products, and more often than not are consumed or neutralized in the production process.

In testimony presented before the House Subcommittee on Commerce, Transportation and Tourism, EPA recently testified that every feedstock chemical has appeared at sites listed on the National Priorities List. The facts are to the contrary, however. EPA has admitted on prior occasion that potassium hydroxide has never appeared at a waste site, even those surveyed under the Hazard Ranking System. Sodium hydroxide has appeared at one NPL site, but no Superfund monies have been expended to clean the area. At that one site, the owner has undertaken remedial action, which will consist of treatment at a local wastewater treatment plant. The hydroxides, even if found at sites, require none of the advanced cleanup technology now being used at the most dangerous sites. By EPA's own admission, the feedstock tax system does not accurately assess chemicals by their appearance at sites or by degree of hazard, yet listing the caustics as feedstocks suggests they are among the most hazardous of chemicals.

The hydroxides simply do not contribute to the Superfund problem. Significantly, they contribute to the Superfund solution, by neutralizing the acids commonly found at waste sites. The caustics are also used in the control of both water and air pollution control. Products such as paper, cotton cloth, and household cleansers depend on the caustics for their manufacture. Neither compound is considered a carcinogen, mutagen, or teratogen. In fact, the Food and Drug Administration has approved both sodium hydroxide and potassium hydroxide as safe food additives.

We strongly recommend that the Committee evaluate the rationale for listing the hydroxides as feedstocks. We urge your favorable consideration of the proposed removal of sodium hydroxide and potassium hydroxide as feedstock chemicals and a consequent grant of a small measure of tax relief to our industry.

SUMMARY

The Chlorine Institute has gone on record as supporting, and continues to support, the Superfund program. The Institute desires a hazardous waste cleanup program that is responsive to the needs of the public and industry. Careful consideration of the various Superfund financing alternatives, tempered by recognition of the unique economic pressures on the chlor-alkali industry and the improper taxation of the hydroxides, will help ensure the fullest possible protection of public health and the environment. The Chlorine Institute and its membership stand ready to assist the Committee in preventing the deterioration of our domestic industry while achieving the goals established in the 1980 CERCLA legislation.

We appreciate having the opportunity to present our views on this important legislative effort, and I will be happy to respond to any questions.

SUMMARY OF TAX RATES ESTABLISHED BY H.R. 1775 AND H.R. 2022 FOR CHLORINE, SODIUM HYDROXIDE AND POTASSIUM HYDROXIDE[*]

CHEMICAL	H.R. 1775	H.R. 2022			
	(all five years)	1985-86	1987	1988	1989-90
CHLORINE	$2.52	4.07	6.10	7.12	18.13
SODIUM HYDROXIDE	2.33	3.76	5.64	6.58	7.52
POTASSIUM HYDROXIDE	8.12	13.11	19.66	22.94	26.21

IMPACT OF SELECTED SUPERFUND LEGISLATION ON THE CHLOR-ALKALI INDUSTRY

(On a worst-case, per year assessment, at highest possible rate).

CHEMICAL	H.R. 5640 (1984)	H.R. 1775	H.R. 2022
CHLORINE	$ 86.441 mil.	$ 26.794 mil.	$ 192.765 mil.
SODIUM HYDROXIDE	$ 84.097 mil.	$ 26.057 mil.	$ 84.097 mil.
POTASSIUM HYDROXIDE	$ 5.897 mil.	$ 1.827 mil.	$ 5.897 mil.
TOTAL	$ 176.435 mil.	$ 54.677 mil.	$ 282.759 mil.

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[*] Based on 1984 chlorine-caustic production levels.

THE CHLORINE INSTITUTE, INC., POSITION PAPER ON SUPERFUND REAUTHORIZATION

The 99th Congress must reauthorize the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), or Superfund, this year. Chlorine producers, who now constitute the third largest group of chemical taxpayers to Superfund, are significantly affected by the provisions of Superfund and pending reauthorization legislation. By the time the taxing authority of the current act expires, U.S. chlor-alkali producers will have paid over $155 million in feedstock taxes on chlorine and caustic alone, or more than $85,000 daily. A major proposal considered by the 98th Congress would have caused chlorine-caustic producers to pay over a third of a million dollars a day—roughly four times the current burden.

The U.S. chlor-alkali industry is in a depressed condition. Its share of world chlorine production which once was two-thirds has diminished to less than one-third today. Approximately 12 percent of U.S. chlorine production is exported as derivatives, and competes in the world market with untaxed materials. This competition effectively prevents any pass-through of the feedstock taxes incurred by U.S. producers. The industry is experiencing an acceleration of these trends caused by such factors as significant energy cost increases, the need to absorb the heavy costs of pollution control and other environmental regulations, as well as the development of competing overseas businesses. Uneconomic operating rates—now still only about 70–75 percent of chlorine nameplate capacity—have contributed to the discontinued operation of twelve plants since 1980. These closures represented a loss of almost 4,000 tons per day chlorine capacity and have created substantial unemployment. Annual chlorine production has experienced zero growth since 1980.

REAUTHORIZATION OF CURRENT LAW

The Chlorine Institute, Inc. is a trade association of chlorine/caustic producers, and is uniquely qualified to comment on the critical Superfund reauthorization issues. The potential impact of this year's Superfund reauthorization may very well exacerbate an already depressed industry situation. Thus, a number of Superfund issues are of specific concern to the Chlorine Institute.

The Chlorine Institute strongly supports the reauthorization of the Superfund program. All members of the Institute recognize that cleanup of priority hazardous waste sites must proceed rapidly and efficiently in order to eliminate the potential dangers posed to health and the environment by the existence of these sites. The Superfund law should be reauthorized as soon as practicable so that there will be no loss in momentum in this vital clean-up program.

REAUTHORIZED SPENDING LEVEL

A Superfund reauthorization level which exceeds EPA's stated annual needs could have the paradoxical effect of retarding EPA's clean-up activity, not speeding them up (testimony of EPA Administrator William Ruckelshaus, March 15, 1984). Overfunding would further deplete industry's capital resources and retard reinvestment, modernization and research. We believe that EPA should be provided with the funds necessary to productively carry out its Superfund mission for the next five years.

FUNDING MECHANISM

The current Superfund program is financed almost entirely by a special industry tax. This tax, imposed on the sale of certain petroleum products, organic and inorganic chemicals, is commonly referred to as the "feedstock" tax. As presently designed and operated, the feedstock system results in an inequitable tax burden on an extremely narrow segment of the industry. Specifically, only a dozen companies are now paying almost 70 percent of the Superfund tax. A more equitable apportionment of the tax burden is needed in which everyone who is or has been part of the hazardous waste disposal problem is part of the Superfund solution.

We believe that one way to achieve a more equitable allocation of the Superfund tax is by supplementing the current funding approach with a "waste-end" approach which taxes the types of hazardous waste which the Superfund program is designed to clean up. The need for significant feedstock tax increases could be reduced by the establishment of a waste-end tax at reasonable levels.

Such a "waste-end" tax should be designed to achieve certain important objectives:

To distribute fairly the tax burden of site cleanup on all hazardous waste disposers;

To provide a direct economic incentive to minimize waste disposal practices that have resulted in Superfund sites; and

To encourage the use of alternative methods of disposal, such as treatment and incineration, rather than land disposal.

A reasonable "waste-end" tax on each dry weight ton of hazardous waste received for land disposal or long-term storage would achieve these objectives. We therefore strongly support enactment of such a tax.

TAXATION OF SODIUM HYDROXIDE AND POTASSIUM HYDROXIDE

Under current law, caustic soda (sodium hydroxide) and caustic potash (potassium hydroxide) are subject to the feedstock tax. We are convinced that these materials are not the types of chemicals that were intended by the Congress to be in the class of taxable feedstocks.

Caustic soda and caustic potash do not contribute to the hazardous waste problem. Among their many uses is the neutralization of acids commonly found at hazardous waste sites. The caustics are also important in air and water pollution control systems, food processing, paper manufacture, cotton cloth production, and household products. Neither compound is on any list of suspected carcinogens, mutagens, or teratogens, and, in fact, the Food and Drug Administration has approved both compounds as safe food additives.

By taxing sodium hydroxide and potassium hydroxide as feedstock materials, the very intent of Superfund is defeated. Superfund was meant to protect the environment from hazardous wastes. Continuing to impose a tax on caustic soda and caustic potash—environmentally beneficial chemicals—ignores their contribution to the Nation. When applied to caustic soda and caustic potash, the feedstock tax can only be termed counterproductive. For these reasons, the Chlorine Institute strongly recommends that these two caustics be removed from the list of Superfund "feedstock" chemicals.

VICTIM'S COMPENSATION

In the 98th Congress, several "victim's compensation" proposals were made. The proposed programs would have provided payments to persons whose health may have been affected by exposure to hazardous substances. A victim's compensation program under Superfund would add a serious and enormously costly federal program to EPA's basic clean-up mission and would divert needed funds from cleanup and control programs. Furthermore, companies that did not create hazardous waste problems in the past and therefore are not responsible for injuries caused by hazardous substances will face an additional economic burden under Superfund.

The Chlorine Institute believes that Congress should carefully deliberate a victim's compensation proposal on its own merits. Such legislation should not be linked to the critical provisions of the Superfund's reauthorization legislation.

SUMMARY

The Superfund reauthorization should create a program that is more equitable, efficient, and attuned to the hazards which created the need for the original legislation. The Chlorine Institute endorses a reasonable spending level, the enactment of a waste-end or similar tax, the removal of caustic soda and caustic potash from the list of feedstock chemicals, and the separate consideration of victim's compensation legislation.

Questions on the Chlorine Institute's position on the Superfund's legislation may be directed to Mr. Robert L. Mitchell, Jr., President of the Institute, at (212) 819-1677.

Mr. JACOBS. Thank you, Mr. Pirkle. Mr. Taylor, your Congressman is among the best I have ever known since I came to Congress in 1965. Mr. Moore.

Mr. MOORE. Thanks, Mr. Chairman, I appreciate that. Mr. Taylor, I am proud to have you here as a constituent, and see you as president of the Battery Council International and appreciate your comments. Mr. Pirkle, good to see you again. We have visited before on these problems.

Would all three of you agree that the feedstock taxes are at their limit, and that any increase in the feedstock taxes—I understood

Mr. Malone indicated that for copper. Would you two agree that any increase in feedstock taxes would be detrimental?

Mr. TAYLOR. Yes.

Mr. PIRKLE. Absolutely.

Mr. MOORE. Then we are left, then, if this committee wishes to increase its tax load, with finding additional revenues. Would you agree with that?

Mr. PIRKLE. Yes, sir.

Mr. TAYLOR. Right.

Mr. MOORE. OK. I think that is the bind our committee finds itself in, and that I just wanted to get that on the record. I am in firm agreement that the feedstock taxes cannot go any higher, that they are at the point now, that we have already caused economic displacement and problems, and maybe even ought to be reduced but certainly not increased. Mr. Pirkle, it would be interesting to see how you come out subsequently with these meetings with EPA on getting the substances you mentioned off the list.

It makes no sense to be taxing something that is not a problem, and I certainly hope we will be successful with that. Mr. Taylor, I want to mention to you, again, that any waste-end tax that in fact discourages treatment or recycling is a mistake, and that I think most of us here on this committee will not be trying to make that mistake as we come up with one.

Mr. TAYLOR. Yes, sir. I appreciate that stand.

Mr. MOORE. I would thank all three of you, and thank you, Mr. Chairman.

Mr. JACOBS. Mr. Daub.

Mr. DAUB. Thank you for being here. And for your patience.

Mr. JACOBS. Yes. We express both out sympathy and our admiration, that you should be the omega panel. Mr. Malone, I know Mr. Pirkle gave some employment figures. Did you include those in your statement, the loss of employment in any given period of time in your industry?

Mr. MALONE. Yes, sir; they are included in it.

Mr. JACOBS. Good. Fine. Thank you all for your patience, and contributions.

I have two statements for the record here; one from the National Wildlife Federation, and the other from the American Independent Refiners Association.

This concludes today's hearings.

[Whereupon, at 4:20 p.m., the hearing was adjourned.]

[Submissions for the record follow:]

STATEMENT OF THE AMERICAN ELECTRONICS ASSOCIATION AND SEMICONDUCTOR INDUSTRY ASSOCIATION

SUMMARY

AEA and SIA supports the reauthorization of Superfund legislation and a waste-end tax supplemental to a feedstock tax, provided the waste-end tax is equitably distributed.

AEA and SIA believes it is important to address the question of what is the most equitable source of funds, in addition to the petroleum and chemical feedstock tax.

Because a broad-based tax does not provide incentive for better management of waste, we believe it is not desirable as a funding mechanism for Superfund. This form of tax is inequitable to companies that generate a very small ratio of hazardous waste compared to their corporate net receipts or earnings/profits.

AEA and SIA believes that any waste-end tax should create economic incentives for waste producers to switch to environmentally preferable methods of waste management.

STATEMENT

The American Electronics Association (AEA) and the Semiconductor Industry Association (SIA) appreciates the opportunity to comment on the proposals to extend the Comprehensive Environmental Response, Compensation and Liability Act (Superfund). Our comments will focus on changes in the present Superfund mechanism and on additional revenue sources that have been suggested to raise funds for the program expansion.

AEA's 2,700 member companies encompass all segments of the electronics industries, including manufacturers and suppliers of computers and peripherals, semiconductors and other components, telecommunications equipment, defense systems and products, instruments, software, research and office systems. The AEA membership includes companies of all sizes, from "start-ups" to the largest companies in the industry. The greatest number of the AEA membership (71%) are small companies employing fewer than 250 employees. AEA estimates that worldwide sales of U.S.-based electronics companies are $305 billion, and AEA member companies account for 66% of this total. Electronics industries represent the single largest manufacturing sector in the country, with 2.6 million employees and an annual payroll in excess of $65 billion.

SIA is a national trade association which represents the majority of United States semiconductor manufacturers in matters of international trade, government policy, occupational health and environment, market statistics and cooperative research. SIA has 54 member companies with facilities in 26 states that employ more than 150,000 people. SIA member companies produce over 80% of American semiconductors.

Purpose of testimony

AEA and SIA welcome the opportunity to present our views and recommendations on Superfund financing methods that are being discussed and debated. AEA and SIA support the reauthorization of Superfund legislation provided that the tax is fair and equitably distributed. The basic purposes of AEA and SIA's testimony are:

To provide the Committee with a better understanding of our industry and why our member companies are interested in the Superfund financing issue;

To present our recommendations for a sound and fair approach to financing Superfund.

Nature of the electronics and semiconductor industries

Members of AEA and SIA encompass all segments of the electronics and semiconductor industries which operate in a highly competitive and worldwide free marketplace. The semiconductor manufacturing industry is so international and decentralized, a domestic company can probably not survive if it does not have substantial foreign operations. Generally these are assembly and test processes. Typically, a small semiconductor device travels 25,000 miles from the initial point of manufacturer to the point of shipment to a distributor or consumer component. Transportation costs are relatively small in comparison to product costs because the units are small and light. The effect of this internationally integrated, highly competitive market is that cost differences of a few cents per unit can have significant revenue and profitability impacts.

Sources and amounts of hazardous wastes generated

According to a May 1985 Congressional Budget Office study, 70 major waste producing industries generated 266 million metric tons of hazardous waste in 1983. Almost half (48%) of all hazardous waste was generated by the chemical and allied products industries. The primary metals industries contributed the second highest quantity of hazardous waste, about 48 million metric tons, or about 18% of the estimated national total. The third largest generator of wastes, with an estimated total of 3 million metric tons or about 12% of the national total, were the petroleum products industries. The remaining industrial categories, which include electronics and semiconductors, represent the other 22%.

In relative terms, the semiconductor and electronics industries produce only modest amounts of hazardous wastes. For example, SIA conservatively estimates that semiconductor manufacturing produces only about 12,500 tons of hazardous wastes annually. This is less than 1% of national hazardous waste total.

Also, the electronics and semiconductor manufacturing companies recycle much of their manufacturing by-products and use other hazardous materials very efficiently so that only small amounts of hazardous wastes are ultimately produced. This is because the industry must purchase and use ultra pure chemicals solvents and acids. The waste generated from the electronic industries can be readily repurified and sold to other industries which do not require the ultra purity of electronic companies. Also, much of the industry is comprised of relatively new facilities constructed in the last decade and, therefore, operate modern environmental control technology.

Financing methods: a discussion

The revenue raising mechanism for Superfund should have two purposes:

(1) to provide sufficient revenue to make EPA action under Superfund credible and effective.

(2) to provide incentive for proper management of hazardous waste.

Ideally we believe this can and should be accomplished by expanding the basis for current feedstock tax and by taxing imported feedstocks while exempting exported feedstocks from tax.

However, this will not provide adequate money for Superfund clean-ups and additional funding is necessary.

Since the improper disposal of hazardous wastes and hazardous materials has occurred at many municipal landfills, which require or may require Superfund action, AEA and SIA believe that the environmental and health impacts of these past and improper disposal practices are a societal problem. Recognizing the current constraints of the nation's budget, AEA and SIA recommend the continuation of the 12.5 % contribution from general revenues.

There are two new funding mechanisms presently before Congress. These two methods are generically a "waste-end tax" and a "broad-corporate" tax. We will discuss all four of these financing alternatives in detail.

A. Feedstock tax

About 87% of the current $1.6 billion Superfund comes from a tax on petroleum and chemical feedstocks. AEA and SIA believe that experience over the past five years suggests several alternatives for modifying the feedstock tax to make it more equitable. It is important to note that the majority of the feedstock tax is passed through to the buyer and, therefore, the cost burden is shifted to the user of the chemicals. AEA and SIA support the following:

First, the list of feedstocks subject to the tax should be expanded. This would make the list more representative of the types of sources that Congress originally identified as appropriate sources for a special Superfund tax.

Second, AEA & SIA believe that imported feedstock materials should be taxed on an identical basis with domestically produced materials. Imported feedstocks have been and continue to be a likely source of hazardous waste disposal problems.

Third, domestically produced feedstocks that are exported should be exempt from the Superfund scheme. The concept is that it is the effects of the feedstocks in the domestic marketplace that have caused hazardous waste problems and not the feedstock manufacturing process itself.

B. General revenues

AEA and SIA support continuing the 12.5% contribution from general revenues.

C. Waste-end tax

A new tax method that has received much attention and broad support is a "waste-end tax" (i.e. a tax on the amounts of disposed hazardous wastes). Although we recognize the administrative complications in collecting this type of tax, we support this mechanism provided that it maintains public policy consistency between RCRA and CERLA. The waste-end tax should be used as an economic tool to discourage land disposal of hazardous waste and acts as an economic incentive to encourage the treatment, incineration and/or recycling of hazardous waste. Furthermore, measures to treat, incinerate or recycle hazardous wastes should be exempted from the waste-end tax. AEA supports the waste-end tax bill (H.R. 2018) that has been proposed by Representatives Ron Wyden and Claudine Schneider. This legislation offers a fair and efficient way to provide another reliable source of revenue for Superfund.

We believe a waste-end tax should be equally applied to all hazardous wastes which are disposed of onto or into the earth. Specifically, the waste-end tax should apply equally to deep well injected wastes as it does to land disposed wastes near the surface. We know so little about the relative fate of deep-well injected wastes, absolutely or in comparison with other disposal methods, and we have no certain knowledge that would lead us to conclude that deep-well injection is not as potentially harmful to the environment as other forms of land disposal. We see no need to encourage deep-well injection. AEA and SIA, therefore, believe that the tax on deep well injection should be the same as other land disposal wastes.

We also believe that on-site and off-site disposal of hazardous wastes should be taxed equally. Approximately 80% of the nation's wastes are disposed of on-site. There is no basis for distinguishing between these two disposal methods for Superfund tax purposes. For example, the National Priority List (NPL) criteria do not differentiate between on or off-site disposal areas. NPL listing criteria are focused on adverse impacts to the environment. Congress should adopt the same approach in establishing a waste-end tax.

D. Broad-based tax

Because a broad-based tax does not provide incentive for better management of waste, we believe it is not desirable as a funding mechanism for Superfund. Also, it is an inequitable tax to those companies that produce or generate very little hazardous wastes in comparison to their net receipts or earnings/profits. We understand, however, there is support for a broad-based tax in Congress, as illustrated by the Senate Finance Committee's vote on May 16th. AEA and SIA oppose a broad-based tax because our industries will suffer a disproportionate tax burden in relation to waste generated either in the past or future. Any broad based tax should be formulated as equitably as possible, and in a manner that produces incentives for clean-ups and effective waste management. If a broad-based tax is imposed, a waste-end tax should be eliminated to avoid an additional tax burden on companies that have only generated small amounts of hazardous waste.

CONCLUSION

AEA and SIA support the reauthorization of Superfund legislation and the waste-end tax supplemental to a feedstock tax, provided the waste-end tax is equitably distributed. We believe that the formulation of Superfund revenue mechanisms should be guided by the same principles and goals that apply to the substantive provisions of the CERCLA and RCRA statues. Those industries that tend to produce more hazardous wastes should, as a matter of fairness and equity, contribute a increased share of Superfund revenues. The Congress should examine any broad-based revenue devices very carefully to fully understand the impact these proposals would have on all sectors of the economy. AEA and SIA would be pleased to meet with members of the Committee to help formulate a taxing scheme that would be equitable to all industrial groups and also provide an incentive for clean-ups of existing hazardous waste sites.

STATEMENT OF THE AMERICAN GAS ASSOCIATION

The American Gas Association is a national trade association representing the natural gas distribution and transmission industry. A.G.A.'s 300 members serve 150 million consumers in all fifty states. Since methane is the principal constituent of natural gas along with small fractions of light hydrocarbons, our members—and all gas consumers—are clearly interested in the methane feedstock tax levied in the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), far better known as Superfund.

Although Superfund has now been in existence for nearly five years, it seems clear that the statute must be reauthorized and that the trust must continue to be funded. The ultimate size of the fund and its disposition, however, are difficult policy issues that only Congress can resolve, and A.G.A. does not take a position on those issues. We only wish to offer our comments on Superfund taxes.

There are several proposals before Congress to reauthorize Superfund taxes. Although different bills rely on different tax mechanisms—or on different combinations of tax mechanisms—there are four basic taxes proposed.

(1) Reauthorizing the present feedstock tax at the same or a higher rate. In S.955, for example, the feedstock tax on methane is reauthorized and remains at $3.44/molecular ton.

(2) A waste end tax on the production of regulated hazardous wastes.

(3) A contribution to Superfund from general tax revenues.

(4) A tax on corporate net receipts that would be dedicated to the CERCLA trust fund.

We have reviewed these proposals in light of A.G.A.'s longstanding support for responsible environmental legislation, the Administration's budget resolution—which we recently endorsed—and our members' firm support for tax simplification and fiscal reform.

Of the four proposals, a waste end tax is the most equitable in terms of matching tax liability with the generaltion of hazardous waste We also support the reauthorization of a feedstock tax, if exemptions for fuels, intermediate feedstocks, and fertilizer production are retained. Because the attached studies show that our domestic petrochemical industry faces strong foreign competition, limited contributions from general revenues may also be necessary to ease the tax burden on a single industry. However, we do not favor a corporate Superfund tax since such taxes are at odds with fiscal reform and tax simplification.

DISCUSSION OF THE FOUR SUPERFUND TAX PROPOSALS

(1) The Feedstock Tax: The existing Superfund imposes an excise tax on the sale or use of 42 specific chemical substances, plus crude oil. The tax is collected on imports and exports, as well as on domestic useage. Methane, which is the principal constituent of natural gas, is taxed at $3.44/molecular ton or about 43 cents/million Btu, when it is used as a feedstock. There are 6 exemptions from the feedstock tax, several of which directly affect the natural gas transmission and distribution industry and its 160 million consumers. Substances that are used for fuels, intermediate feedstocks, and fertilizer production are exempt. Congress included these exemptions: to keep the tax from falling on consumers, in the case of fuels; to prevent double taxation, in the case of intermediate feedstocks; and to aid American agriculture, in the case of fertilizers. These policy considerations remain valid today and Congress should reauthorize all the exemptions, if it reauthorizes the feedstock tax.

We wish to make absolutely clear that the only reason that natural gas is taxed under Superfund is because of its limited use for feedstocks to make other chemical substances, few of which are regulated by CERCLA. Natural gas is not a toxic substance. It is not regulated under Superfund, and is in fact specifically exempt from that statute. Indeed, natural gas is such an environmentally benign fuel that it produces no liquid or solid residues when burned. Natural gas also emits fewer combution gases than other fossil fuels and can be used with coal and oil to reduce total air pollution from those fuels.

Fuels Exemption: When Superfund was enacted in 1980, Congress wisely excluded substances used as fuels from taxation since they do not add to the accumulation of hazardous wastes (26 U.S.C.A., 4662 (b) (1)). In 1984, more than 97% of all natural gas sold was used as a fuel, while less than 3% of gas sold was used for feedstocks.

User:	*Usage (percent)*
45 million homes	25
3.5 million small businesses, schools and hospitals	14
182,000 industrial customers for steam and electrical generation, plus numerous manufacturing and agricultural processes	53
Other uses, including 2.7% feedstock use	8

Thus, the overwhelming majority of all natural gas sold in this country is used as a safe and efficient fuel. When the feedstock tax is reauthorized, Congress should continue to exclude methane and other substances—such as butane—when they are used as fuels since they do not contribute to the production or accumulation of hazardous waste.

The Tax Reform Act of 1984 (P.L. 98-369) further clarified the feedstock tax so that the production of liquid fuels from methane, butane, and nine otherwise taxable feedstocks is exempt. Since the transportation fuels made with these feedstocks: (1) are already taxed; and (2) are totally consumed when used, Congress should also retain these exemptions. Substances should only be taxed to the extent that they are used as final feedstocks.

Intermediate Feedstock Exemption: Petrochemical manufacturing actually consists of a series of steps that use basic substances to create more and more complex chemicals. For example, natural gas is a basic feedstock for ammonia. Ammonia is then used as a feedstock in various other chemical processes and thus is taxed under Superfund as a feedstock. In order to prevent double taxation, 26 U.S.C. 4662(d) permits the Secretary of the Treasury to refund or credit the tax when a manufacturer uses one taxable substance to make a second taxable substance. Our survey of the literature and our own studies show that 60% of the natural gas that is used for feedstocks goes into ammonia production. (Please see Appendix A). As a matter of tax equity, any reauthorization MUST retain this exclusion to prevent double taxation.

Fertilizer Exemption: The present law also excludes from the feedstock tax ammonia, methane, and other constituents of fertilizer (26 U.S.C. 46 62(b)(2)). Congress included this provision for a number of still valid reasons: (a) as an aid to U.S. agriculture; and (b) as a matter of equity, since fertilizer is not a waste within the preview of CERCLA, although its manufacture and use is comprehensively regulated by other environmental statues. The American Gas Association recently completed a study on worldwide ammonia production. This study—which appears as Appendix B—found that, after a period of very harsh competition from subsidized imports, domestic ammonia producers may regain some market share because capital costs for new U.S. capacity are lower than capital costs in Third World countries. However, it is absolutely essential not to burden a remerging domestic ammonia industry with higher product costs—such as feedstock taxes—since American manufacturers face very severe competition from Canadian, Mexican and Caribbean ammonia exporters. For these reasons, the exclusion from the feedstock tax for fertilizer production must be preserved in the reauthorization. We would also add that imported feedstocks should be taxed.

In summary, the present tax law includes three types of exclusions that affect natural gas: (1) exclusions for fuels; (2) exclusions for intermediate feedstocks to prevent double taxation; and (3) exclusions for fertilizer production. All of these exclusions were created for policy objectives that are still valid. Each exclusion should be retained.

(2) A Waste End Tax: Although there is no waste end tax in the present law, all the reauthorization bills include a tax on the quantity of hazardous wastes that must be disposed of at the end of the manufacturing cycle. In addition to raising more revenue for the CERCLA fund, the tax also encourages recycling and/or destruction of hazardous wastes. Of the four options, it most clearly matches the tax burden with the amount of waste generated, and for this reason A.G.A. finds it an appropriate Superfund tax mechanism. The chief problem with waste end and feedstock taxes is that they fall on the petrochemical industry. One industry can not sustain the tax burden for a very large Superfund, thus, we believe that limited contributions from general revenues may be necessary.

(3) Contributions From General Revenues: The present Superfund is partially funded by contributions from general revenues. However, we understand that the Administration's bill eliminates this contribution. A.G.A. has endorsed the Administration's budget resolution, since we believe that deficit reductions are essential for the continued economic well-being of the United States. Whether or not CERCLA funding from general revenues should be cut, however, is a difficult policy issue that only Congress can resolve. Since both feedstock and waste end taxes fall on the domestic petrochemical industry, if a very large fund is needed to clean-up abandoned hazardous waste sites, one industry may not be able to finance the entire fund without contributions from general revenues. Our attached appendices show that the petrochemical industry has experienced sharp foreign competition. Therefore, large excise and waste end taxes could have disasterous consequences for U.S. petrochemical companies. Contributions to Superfund from general revenues are also justifiable since the economy—as a whole—benefited from the manufacturing processes that produced the wastes. Thus, if Congress determines that a large Superfund is needed, contributions from general revenues are appropriate, as long as they stay within the budget framework.

(4) General Corporate Taxes: Despite the surface appeal of a corporate tax dedicated to Superfund, A.G.A. does not support this funding mechanism for two reasons:

A.G.A. does not believe that it is good tax policy to add more off-budget items at this time. In future years, the tax would not be subject to the same scrutiny and public debate that Congress applies to line items in the budget. If Congress is serious about tax simplification and other fiscal reforms, then it should be very cautious about the creation of new off-budget items.

From a parochial point-of-view, several of the corporate tax proposals require the taxpayer to change its accounting and/or recordkeeping practices. Thus, this tax will increase compliance costs in addition to being at odds with tax simplification goals.

On the first point, while it is true that corporations have benefited from the processes that created hazardous wastes—that same nationale applies to the public at at large. All our citizens have benefited from those processes—not only from more jobs and a higher standard of living but from convenient, consumer products. Furthermore, corporations would contribute to the Superfund—through their ordinary corporate taxes—if general tax revenues were used to supplement the fund.

Frankly, the appeal of a dedicated tax is that it is an off-budget item. From the taxpayers' perspective, however, new off-budget items contravene the goals of tax simplification and budget reform. If an item cannot be justified during the rough and tumble of debate on the budget, that is no reason to treat it as an off-budget item. The budget process will necessitate searching inquiry and Congressional scrutiny into the operation of the fund. Since the Superfund tax will collect significant amounts of money over the decade, this oversight may be invaluable.

On the second point, various tax mechanisms have been proposed: (a) value added or general federal sales taxes on manufacturing; (b) net receipts taxes on corporate gross receipts less costs of goods sold; and (c) taxes on earnings and profits. Each proposal has defects. A value added or general federal sales tax represents a major change in U.S. tax policy. Neither taxpayers nor tax collectors are set-up to pay or collect this tax. Initial start-up and compliance costs would be completely out of proportion to the tax raised. Net receipts taxes, on the other hand, may cause serious economic distortions since they favor service industries over manufacturing. Furthermore, domestic manufacturers are even more disadvantaged, unless imports are also taxed. Lastly, corporations that are able to take advantage of numerous tax preferences may escape a tax on earning and profits altogether. Thus, a surtax may add to existing inequities in the tax code. The defects in all three general corporate tax proposals suggest that new, dedicated taxes are inappropriate. Instead, Congress should devote itself to tax simplification and reform.

SUMMARY

Natural gas is not a toxic substance regulated under Superfund. Gas is taxed under CERCLA soley because it is valuable feedstock for certain chemicals. The Committee must continue to exclude substances used for fuels, intermediate feedstocks, and fertilizers from Superfund taxation. From a policy perspective, the Committee should consider the economic wellbeing of the domestic petrochemical industry before levying a high waste end or feedstock tax. To ease the Superfund tax burden on a single industry, limited contributions from general tax revenues may be necessary. However, the alternative of a general corporate tax will increase compliance costs and is at odds with tax and budget reform—thus, A.G.A. opposes a general corporate tax.

Appendix A

GAS RESEARCH INSIGHTS

An occasional publication of Gas Research Institute on topics of current interest.

Status and Outlook for Natural Gas Use As Chemical Feedstock

by

Michael E. Samsa
Bruce A. Hedman
Irvine J. Solomon

August 1984

Abstract

The future of natural gas consumption by the U.S. petrochemical industry has been a topic of growing concern in the natural gas industry over the past several years. The petrochemical industry, which includes SIC 28 (Chemicals and Allied Products) and SIC 29 (Petroleum and Coal Products), has historically accounted for about one-half of total industrial gas consumption, or about 3.0 to 3.2 quads per year. Recently, however, natural gas consumption in the petrochemical industry has declined as a result of reduced refinery throughput, process efficiency improvements, and a drop in production of many intermediate and finished chemical products. Indeed, composite domestic production of the fifty largest volume chemicals has declined an average of 1.3 percent per year since 1977.

Natural gas consumed by the petrochemical industry is used either for fuel and power or as process feed material for conversion to other intermediate or finished-product chemicals. Of the 3,125 billion cubic feet (bcf) of natural gas sales to the petrochemical industry in 1980, 688 bcf, or 20 percent, was used as a process feedstock. An additional amount of gas, approximately 475 bcf, was consumed as fuel associated with methane feedstock conversions. The remaining 1,962 bcf was consumed for fuel and power throughout the petroleum and chemical industry.

This analysis focuses on the economic, market, and technological questions related to the status and outlook for natural gas use as a chemical feedstock. The purpose is to review the important factors determining the future of gas consumption in this segment of the petrochemical industry and to provide perspective on the relative magnitude of each in determining this future. The fundamental question to be answered is what, if any, is the appropriate role for GRI-sponsored research in chemical conversion of methane that would be of mutual benefit to the regulated gas industry and the customers it serves.

The analysis concludes that the overriding determinants governing the future of bulk chemicals currently produced from methane are relatively high domestic natural gas prices and strong efforts on the part of major oil-producing nations to export high-value-added products derived from what is now flared gas. Thus, there is little optimism that near-term R&D improvements in existing technologies could significantly alter current market trends. Research directed toward the catalytic production of bulk chemicals not currently derived from methane, and basic research into new ways of breaking and "reforming" the methane molecule bonds by other catalytic or biological routes offer some potential in the longer term.

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Introduction

In 1980, natural gas sales to all sectors of the economy totaled 18,216 billion cubic feet (bcf). Of that amount, U.S. industry (excluding lease and plant fuel and electric utilities) consumed 7,172 bcf. As shown in Figure 1, the petrochemical industry, composed of SIC 28 (Chemicals and Allied Products) and SIC 29 (Petroleum and Coal Products), consumed 44 percent of industrial gas sales, or 3,125 bcf of natural gas, as a fuel and feedstock.[1,2]

Fuel uses, excluding fuels for feedstock conversion, accounted for 63 percent (1,963 bcf) of natural gas consumption by the petrochemical industry. The remaining 37 percent (1,163 bcf) was used as a chemical feedstock and as fuel associated with the conversion of methane to commodity chemicals. The largest volume chemicals currently produced from methane feedstock include ammonia, methanol, hydrogen, carbon black, and others such as acetylene, hydrogen cyanide, and chlorinated methanes. In 1980, a peak production year for bulk chemicals from methane, nearly 60 percent of the feedstock and associated fuel was used for the production of ammonia. Methane for ammonia feedstock accountedfor 367 bcf, while an additional 300 bcf of natural gas was used as fuel in the methane-to-ammonia conversion process. Methanol production consumed another 132 bcf of natural gas, 77 bcf as feedstock and 55 bcf as fuels. Hydrogen accounted for just over 300 bcf of methane consumption, 205 bcf as feedstock and an estimated 100 bcf as fuel. Carbon black and other chemicals make up the remainder.

It is estimated that approximately 40-50 percent of natural gas consumed by the petrochemical industry in 1980 was supplied by intra and interstate pipelines. The remaining 50-60 percent was supplied by direct producer sales. Although difficult to determine from available data sources, an estimated 30-35 percent of the feedstock methane and associated fuels is transported in interstate pipelines. At 1980 chemical production levels, this amounts to an interstate gas market of 350-400 bcf.

The future of this natural gas market depends critically on a number of economic and production factors, as well as regional and international trade considerations related to those bulk chemicals now produced primarily from feedstock methane. The status and outlook for each major commodity chemical is discussed separately in the following sections. Implications of these factors and opportunities for gas industry R&D are discussed in the final section.

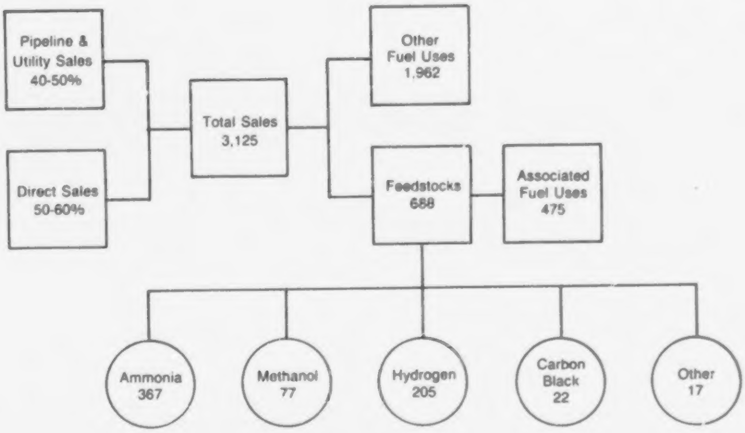


Figure 1. Natural Gas Consumption in the Petrochemical Industry in 1980 (Billion Cubic Feet). **(Source: Ref. 2 and GRI estimates.)**

Ammonia (NH_3)

Ammonia is produced by catalytic reaction of nitrogen from air and hydrogen from natural gas. Consumption of ammonia in the United States is dominated by its application in nitrogenous fertilizers, which accounts for 80 percent of the end-use demand. Resins, fibers, and plastics used primarily in the construction and automotive industries account for an additional 15 percent of ammonia demand, with the remaining 5 percent used in the production of explosives for mining and military applications.

Ammonia is the largest consumer of feedstock methane, and in the peak production year, 1980, it accounted for the consumption of 367 bcf of natural gas for feedstock, and an additional 300 bcf of natural gas for fuel. As shown in Figure 2, U.S. ammonia production grew steadily from 13.8 million metric tons in 1973 to a peak of 17.8 million tons in 1980. Domestic production declined 25 percent between 1980 and 1983, falling to a 10-year low of 13.1 million metric tons. Industry estimates of ammonia production for 1984 forecast a recovery to 1982 production levels of 14.5 to 15.0 million tons. Lower grain inventories and an end of the government's payment-in-kind program will lead to the restoration of a sizable portion of the agricultural acreage previously held out of production and greatly boost ammonia demand.[3,4] Reduced demand for ammonia products coupled with rising natural gas prices has lead to the permanent or temporary closing of nearly a quarter of the U.S. ammonia production capacity that was operating 1976. Figure 3 shows by state the ammonia plant capacities in operation at year-end 1982 and closed down since 1976. Of the 69 plants currently operating, 61 percent (11.3 million metric tons per year of capacity) is located in major gas-producing states including Texas, Louisiana, Oklahoma, New Mexico, and Alaska. By contrast, two-thirds of the 5.0 million metric tons per year of plant capacity closures have occurred in states served primarily by interstate pipelines. At anticipated 1984 ammonia production levels, it is estimated that these plant shutdowns will result in the loss of approximately 85 bcf of interstate natural gas feedstock and fuel-use sales.

High U.S gas prices (relative to oil-rich nations), low-cost imported ammonia, and reduced domestic demand for nitrogen fertilizers are the major factors contributing to ammonia plant shutdowns and reduced profitability of those plants still operating. In mid 1982, the average price paid for natural gas by U.S. ammonia producers was \$2.80/10^3cf distributed as follows:[5]

% Capacity	Range (\$/10^3 cf)	Average (\$/10^3 cf)
19	less than 1.99	0.63
15	2.00–2.99	2.86
42	3.00–3.49	3.17
24	more than 3.50	3.77

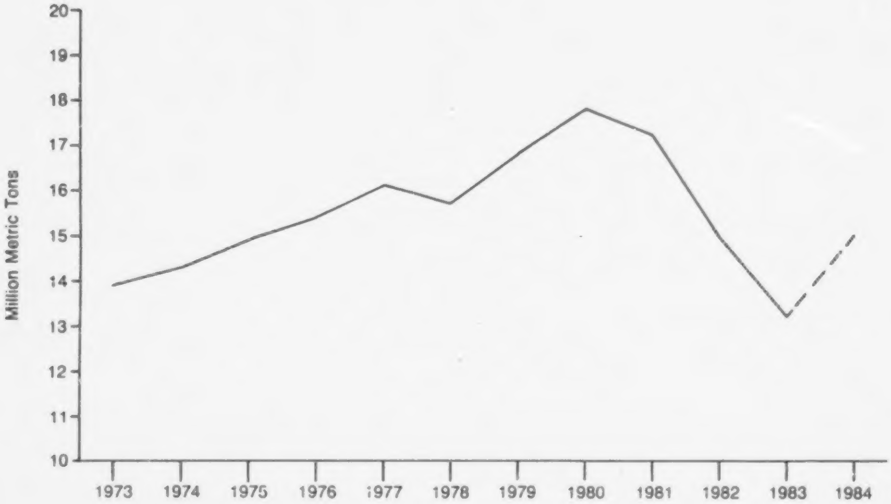
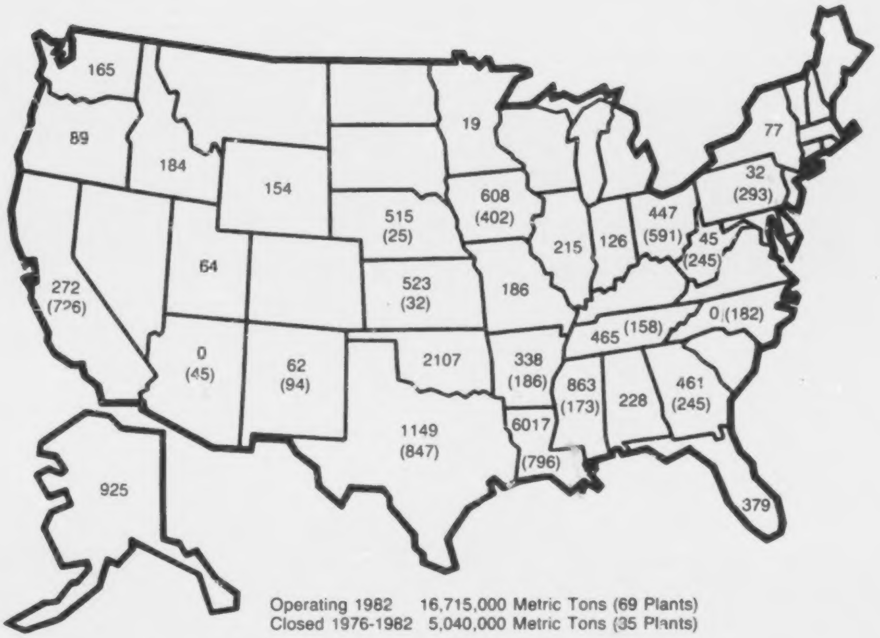


Figure 2. U. S. Ammonia Production. (Source: Refs. 1, 3, 4.)



Operating 1982 16,715,000 Metric Tons (69 Plants)
Closed 1976-1982 5,040,000 Metric Tons (35 Plants)

Figure 3. Ammonia Production Capacity at Year-End 1982 and, in Parentheses, Ammonia Capacity Closures Over the Period 1976-82 (Thousand Metric Tons/Year). (Source: Ref. 5.)

As indicated in Table 1, a \$2.80/10^3 cf gas price contributes to over 60 percent of the total production cost for a typical ammonia plant and an \$11/metric ton net loss on a full-recovery-cost basis. At \$162/metric ton, the current peak seasonal market price for ammonia, a \$2.50/10^3 cf gas price would be required to break even on this basis. On a cash basis (i.e., excluding capital cost recovery), ammonia producers can break even at gas prices up to \$3.30/10^3 cf.

The gas consumption rate assumed in Table 1, 37.5 10^6 Btu/metric ton of ammonia, was adopted from Chem Systems, Inc. estimates for the American Gas Association[5] for ammonia plant technology coming on stream in 1981. State-of-the-art technology being incorporated into new Canadian ammonia plants reportedly will lower gas consumption rates by about 25 percent, ranging from 27 to 28X10^6 Btu/metric ton.[6,7] Even with these much improved efficiencies, ammonia production economics become marginal, at best, with U.S. gas prices. At the \$2.80/10^6 Btu shown in Table 1, state-of-the-art efficiencies would reduce natural gas costs to about \$68.50/metric ton resulting in a total production cost of \$145/metric ton and about a 4 percent return on investment. This small profit margin would be eliminated, however, under new contract gas prices. Many plants still operating are doing so on a cash basis or are taking advantage of regionally higher ammonia market prices. Only about 3 million metric tons per year of capacity still benefit from old gas contracts ranging from \$0.35-\$0.70/10^3 cf.

In February 1983, gas pipeline acquisition costs (i.e., prices paid to producers) peaked at \$3.24/10^6 Btu and have since declined by 10.5 percent to \$2.90/10^6 Btu in early 1984. Following this pattern, the gas price for industrial sales by major pipelines declined over 9 percent from a peak of \$4.50/10^6 Btu in April 1983 to \$4.08/10^6 Btu in February 1984. Even at these U.S. gas prices, a market price of \$175-225/metric ton of ammonia would be required to stimulate any significant increases in domestic ammonia production.[8] Top market prices, however, have generally been below \$165/metric ton, but could reach higher levels as demand rises following an end to the government's agricultural acreage set-aside program.

Table 1. Ammonia Production Costs (1982 $) Using Current Technology Basis (Source: Ref. 5)

Plant Capacity:	1000 Metric Tons/Day
Annual Production:	340,016 Metric Tons/Yr.
Natural Gas Use:	37.54X10^6 Btu/Metric Ton
Capital Investment:	$140 Million

Fixed Costs	**$1000/Yr**	**$/Tonne**
Labor & Materials	4,819	14.17
Overhead	5,284	15.54
Depreciation	10,105	29.72
Subtotal	20,208	59.43
Variable Costs		
Utilities, Catalyst and Chemicals	2,903	8.54
Natural Gas @ $2.80/$10^6$ Btu	35,744	105.12
Subtotal	38,647	113.66
Total Cost of Production	58,855	173.09
Ammonia Market Value @ $162/Tonne	55,083	162.00
Net Loss	(3,772)	(11.09)

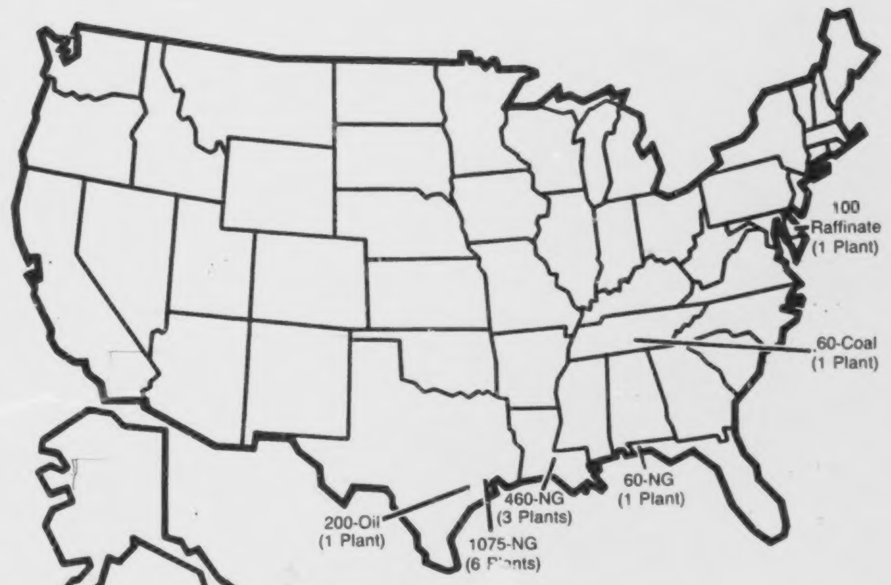
In 1982 the U.S. imported 2.2 million metric tons of ammonia primarily from the USSR, Mexico, Canada, and Trinidad. In contrast to U.S. gas prices, Mexican ammonia producers pay an average of $0.44/$10^3$ cf, which contributes only $16.50/metric ton to the ammonia production cost.[9] Until recently, the U.S. exported about 1.0 million metric tons of ammonia annually. Exports have dropped sharply in the last few years and now amount to only about half the historic levels.

Historically, U.S. ammonia production has been somewhat cyclic as producers respond to agricultural fertilizer demands. The cyclic nature of this market will likely continue in the future, but it is doubtful that domestic ammonia production will ever exceed 1980 production levels. World ammonia production, on the other hand, is projected to grow from just over 100 million metric tons per year in 1980 to 120-125 million by 1990.[10]

The long-term outlook will depend primarily on the worldwide demand for nitrogen fertilizers and the future of domestic natural gas prices. One recent analysis[8] indicates the need for up to 180 new and replacement ammonia plants worldwide to keep pace with increases in world population. Although industrial gas prices have recently stabilized and declined, their relatively high level compared with other major ammonia-producing nations, coupled with low utilization rates, suggests that U.S. ammonia capacity will remain stable, at best, through 1990. World capacity is expected to increase from 118 to 165 million metric tons per year over the same period.[10,11]

Methanol (CH_3OH)

Methanol is produced by a reaction of carbon monoxide and hydrogen made by steam-reforming natural gas or heavier hydrocarbons. There are presently 13 methanol plants in the United States with a combined production capacity of nearly 1,955 million gallons per year. Natural gas is used as a feedstock in 10 plants representing 1,595 million gallons per year of capacity. Two plants use oil or refinery by-product, while the remaining facility, operated by Tennessee Eastman, uses a coal-based process to produce methanol that is further processed onsite to acetic anhydride. Shown in Figure 4 are the locations of methanol production plants. The natural-gas-based facilities are located exclusively in Texas, Louisiana, and Florida and are directly supplied by producers or intrastate gas pipelines.



Nat. Gas	1,595 x 10^6 gal/yr
Oil	200 x 10^6 gal/yr
Coal	60 x 10^6 gal/yr
Other	100 x 10^6 gal/yr
Total	1,955 x 10^6 gal/yr

Figure 4. Methanol Production Capacity at Year-End 1982 (Million Gallons/Year).
(Source: Ref. 5.)

Except for 1981, when domestic methanol production peaked at 1.3 billion gallons, annual production over the past decade varied between 0.85 and 1.1 billion gallons. Production in four of the last five years has been 1.1 billion gallons, which accounted for consumption of 77 bcf of natural gas feedstock and 54 bcf of natural gas fuel annually. Production forecasts for 1984 total about 1.25 billion gallons, citing continuing economic recovery and increased fuel-use applications as underlying reasons for the higher estimates.[4] Figure 5 shows U.S. methanol production history over the past decade.

The greatest demand for methanol is as a chemical intermediate for further processing into formaldehyde, acetic acid, and methyl methacrylate, which together compose 53 percent of the methanol market as shown in Figure 6.

Formaldehyde, used in the production of adhesives for plywood and particle board, insulation, and plastics represents the largest single share and in 1981 accounted for 37 percent of methanol demand. Acetic acid is a rapidly growing market for methanol and currently accounts for about 12 percent of demand. The market demand for acetic acid includes applications in construction materials and paints as well as textile and paper coatings. Although demand for acetic acid has been relatively stable at 1.3 to 1.5 billion pounds per year over the past decade, methanol's growing share of this market has resulted from development of a methanol carbonylation process that has proved to be more economical than the existing ethylene oxidation route. Should the entire U.S. production of acetic acid eventually convert to the methanol carbonylation process, the demand for methanol for this market segment could increase from 150 million gallons presently to 235 million gallons annually. Production of methyl methacrylate accounts for an additional 4 percent of methanol use and ultimately finds market outlets as acrylic sheets and various surface coatings.

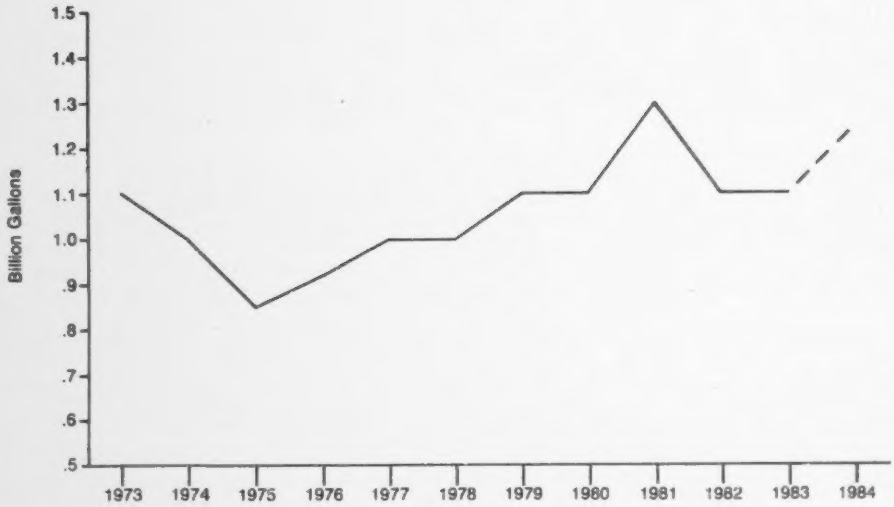


Figure 5. Methanol Production (Billion Gallons). (Source: Refs. 1, 3, 4.)

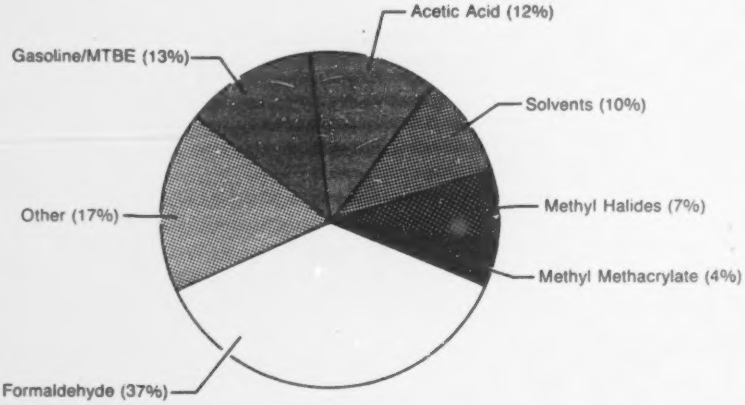


Figure 6. Breakdown of 1981 U. S. Methanol Demand (1.3 Billion Gallons).

Industrial solvents and other uses, primarily dehydration agents, represent 27 percent of total methanol demand. Methyl halides, which represent 7 percent of the methanol market, are used in the manufacture of silicon rubber and various pesticides and herbicides.

The newest market outlet for methanol, and the only end use with a potential for high growth in the future, is the fuel-use market, which consumed about 150 million gallons of methanol in 1982. The high octane quality of methanol makes it an attractive blending component for gasoline. However, there remains some controversy over using increased quantities of methanol and methanol derivatives as octane-enhancing constituents in automotive fuels. During the last several years, the use of methanol and methanol-derived cosolvents for gasoline blending has increased significantly. The gasoline additive methyl tertiary butyl ether (MTBE), made by an acid-catalyzed reaction of methanol and isobutylene, has consumed significant quantities of methanol as its use grows as an octane booster for unleaded gasoline. More recently, a 1:1 blend of methanol and gasoline-grade tertiary butyl alcohol (GTBA) has been marketed by ARCO under the trade name Oxinol as an octane-enhancing gasoline additive.

Currently, neat methanol (pure methanol without a cosolvent) is permitted in gasoline at concentrations only up to 0.3 percent.[3] This small amount has been allowed to absorb any water in the gasoline and thereby reduce icing problems in cold weather. However, methanol blends are reportly used in more than 2 percent of all gasoline now sold in the United States.[12] Most of the methanol being used is under waivers previously granted to ARCO and American Methyl. The ARCO waiver allows blending of GTBA and methanol up to 4.6 percent by volume when the ratio of methanol to GTBA is 1:1. The waiver for American Methyl allows a volumetric methanol content of up to 12 percent, with a ratio of methanol to cosolvent of 6.5:1.[13]

Ford Motor Company is testing a specially produced fleet of 587 methanol-powered Escorts, most running on a fuel comprised of 90 percent methanol mixed with 10 percent unleaded gasoline. Over 500 of these vehicles are being tested in California, mostly by state agencies; more than a dozen were bought by the state of Pennsylvania promoting methanol made from coal while others were purchased by government agencies in Sweden and New Zealand.[14,15]

While Ford is demonstrating methanol-fueled vehicles, other U.S. and foreign auto manufacturers are opposed to high concentrations of methanol in gasoline. General Motors is concerned only about cases where the methanol content exceeds 5 percent by volume. Chrysler and Toyota have expressed more serious concerns. Owner manuals for 1984 Chryslers, for example, warn motorists not to use gasoline containing methanol and that doing so may void the manufacturer's warranty.[13] AMOCO has recently run full-page ads in leading newspapers stating that it does not add methanol to any of its gasolines and that methanol-blended gasolines reduce vehicle mileage rates.

Amoco's claims are supported by General Motors test results comparing the fuel economy of gasoline and 90% gasoline/10% methanol blends using stock engines and carburetors. GM's tests showed almost idential volumetric fuel consumption at steady-state speeds less than 30 miles per hour. Above 30 miles per hour, however, the fuel economy of the gasoline/methanol blend dropped sharply to 10-15 percentage points below the levels achieved by straight gasoline.[14]

The volumetric energy content of methanol is about half that of gasoline (64,150 Btu/gal vs. 123,360 Btu/gal). Addition of methanol to gasoline reduces the fuel energy content and, if carburetion is not adjusted for the change, results in a leaner air/fuel mixture supplied to the engine. In older cars with relatively rich carburetion, the leaning effect of a blend can improve thermal efficiency and compensate for the loss in energy content, so that a net increase in fuel economy is possible. However, because most late model cars either run lean or stoichiometric, further leaning by a blend degrades fuel economy. For this situation, volumetric fuel economies can be lower and cost per mile higher because of the lower energy content of the gasoline/methanol blend compared with straight gasoline. Carburetor adjustments could compensate for some loss in fuel economy, but such adjustments are not allowed under existing environmental regulations.

The economics of neat (100%) methanol as a transportation fuel are considerably different from the economics of gasoline/methanol blends. Although the volumetric energy content of methanol is approximately one-half that of gasoline, the higher octane number of methanol permits the use of higher-compression-ratio engines, which allow gains in thermal efficiency. A fully optimized methanol-fueled engine can achieve up to a 15 percent improvement in thermal efficiency over its gasoline-fueled counterpart.[17] Therefore, neat methanol fuel priced at \$9.35/10^6 Btu (\$0.60/gal) is equivalent to gasoline priced at \$8.10/10^6 Btu (\$1.00/gal). On a miles-per-gallon basis, engine efficiency improvements only partially offset the lower volumetric energy content of methanol compared with gasoline. The miles per gallon of methanol could be as much as 40 percent lower than the miles per gallon of gasoline. This means that the methanol-fueled vehicle would require a 67 percent larger fuel tank to maintain driving range between fillings.

Other automotive problems can occur with volumetric concentrations of methanol in gasoline above 10 to 15 percent. First, methanol is hydroscopic and tends to absorb moisture until phase separation occurs. Even with 10 percent neat methanol in gasoline, phase separation will occur at only a few tenths of a percent water at temperatures below freezing. The heavier water-methanol layer tends to accumulate at the bottom of the tank and may be charged to the engine, which then will not run.

The deviation of methanol-gasoline mixtures from ideal solution behavior can also cause problems with vapor lock. Figure 7 shows that the addition of even small quantities of neat methanol to gasoline increases the Reid vapor pressure of the mixture disproportionately. At very large concentrations, in excess of 75-80 percent methanol, the Reid vapor pressure drops sharply below the typical gasoline value of 7 psi. In order to maintain an acceptable vapor pressure in gasoline-methanol mixtures of less than 75 percent methanol, butanes and pentanes must be withdrawn from the gasoline blending stock. The economics of this procedure depends on the alternative uses for the withdrawn hydrocarbons, which currently have relatively low market values.

Methanol may also corrode many of the materials used in automobile fuel systems, including lead in the tanks and aluminum and zinc in the carburator and fuel pump. Methanol also swells rubber and plastic components. Although some progress has been made with corrosion inhibitors, wide use of high methanol-to-gasoline ratio mixtures would likely require the adoption of new materials for auto fuel systems.

While methanol is a much cleaner burning fuel than gasoline, at least one auto manufacturer contends that the addition of methanol to gasoline increases evaporative emissions at the filling station by anywhere from 30 to 110 percent and that it shortens the life of catalytic converters installed on new engines. Drivability and cold-start problems resulting from the high latent heat of methanol are also disadvantages associated with very high concentrations of methanol, in excess of 85-90 percent.

As a result of these problems with methanol-gasoline mixtures, market penetration beyond the range of 5-10 percent of gasoline consumption will be difficult unless one or more of the following contingencies occur:

- Gasoline prices rise more rapidly than methanol prices. With deregulation of natural gas, its price will tend to rise with oil prices making this possibility unlikely. However, if oil and gas prices rise to the point where methanol production from coal becomes competitive, it may be the oil-coal price differential that ultimately determines the market penetration of methanol.
- In a manner typical of new industries, the real price of methanol could fall due to cost decreases that occur as the methanol fuels industry grows. This also is unlikely for natural-gas-based methanol production since the feedstock and fuel already account for over two-thirds of the production cost.

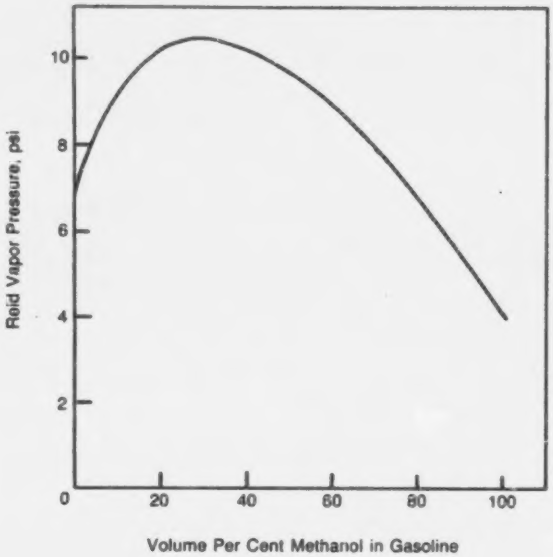


Figure 7. Effect of Methanol on Gasoline Reid Vapor Pressure. (Source: Ref. 18.)

- Governments could choose to tax methanol at a lower rate than gasoline in order to offset its competitive disadvantage. At world oil prices projected in GRI's Baseline Projection, there is really not much incentive for government intervention.

In 1983, list prices for methanol at the Gulf Coast were around \$0.72/gallon with some discounting below that level. By early 1984, large-volume list prices had dropped to the \$0.40-\$0.45/gallon range at the plant site.[3,4] Table 2 itemizes natural-gas-to-methanol production costs for current technology operating at 93 percent stream factor and consuming 119.5 cubic feet of natural gas per gallon of methanol output. Costs are based on a \$2.80/10^6 Btu natural gas price, which accounts for \$0.33 of the \$0.50/gallon total production cost. At an early 1983 methanol market value of \$0.72/gallon methanol producers could expect to earn \$0.22/gallon, corresponding to a very acceptable 24 percent return on investment. At \$0.40 to \$0.45/gallon, current methanol prices are about equivalent to the cash cost of production (i.e., excluding depreciation charges and any return on investment).

This recent price drop is a result of a significant over capacity of methanol facilities in the United States. Total present capacity is 1,955 million gallons and, with production at 1,250 million gallons in 1983, the average industry-wide operating rate was 64 percent. But in 1983 an estimated 500 million gallons of capacity did not operate or operated only intermittently resulting in an average stream factor of 88 percent for those facilities still on line.

With over two-thirds of the methanol production cost made up of variable costs, primarily natural gas feedstock and fuel, the economics of methanol production are not strongly dependent on moderate changes in plant stream factors. At gas costs of \$2.80/10^6 Btu and methanol prices at \$0.72/gallon, a reduction in plant factor from 93 to 88 percent results in a drop in return on investment from 24 percent to 22 percent. Natural gas price has a much more dramatic impact on methanol production economics. Figure 8 shows the impact of increasing gas price on gas-to-methanol plant return on investment (ROI) at various methanol prices. Also shown are the 1983 GRI baseline projected regional industrial gas prices for 1990 in four regions where new methanol production capacity might be installed near existing refineries if gasoline additive demand increases significantly.[19] Figure 8 suggests that return on methanol plant investment is strongly dependent on gas price, declining by as much as 15 percent for every \$1/10^6 Btu increase in gas price. The figure also suggests that, at projected future gas prices, the West South Central region, where most U.S. methanol is currently produced, holds a significant production cost advantage over other regions.

Table 2. Gas-to-Methanol Production Costs(1982 \$) on a Current Technology Basis (Source: Ref. 5)

Plant Capacity: 1000 Metric Tons/Day
Annual Production: 113.5 Million Gallons/Year
Natural Gas Use: 0.1195X10^6 Btu/Gallon
Capital Investment: \$102 Million

Fixed Costs	**\$1000/Yr**	**¢/Gal**
Labor & Materials	4,228	3.72
Overhead	4,491	3.96
Depreciation	8,245	7.26
Subtotal	16,964	14.94
Variable Costs		
Utilities, Catalyst and Chemicals	2,070	1.82
Natural Gas @ \$2.80/10^6 Btu	37,988	33.45
Subtotal	40,058	35.27
Total Cost of Production	57,022	50.21
Market Value @ 72¢/Gal	81,756	72.00
Return on Investment (ROI)	24,734	21.79
Percent ROI	24%	

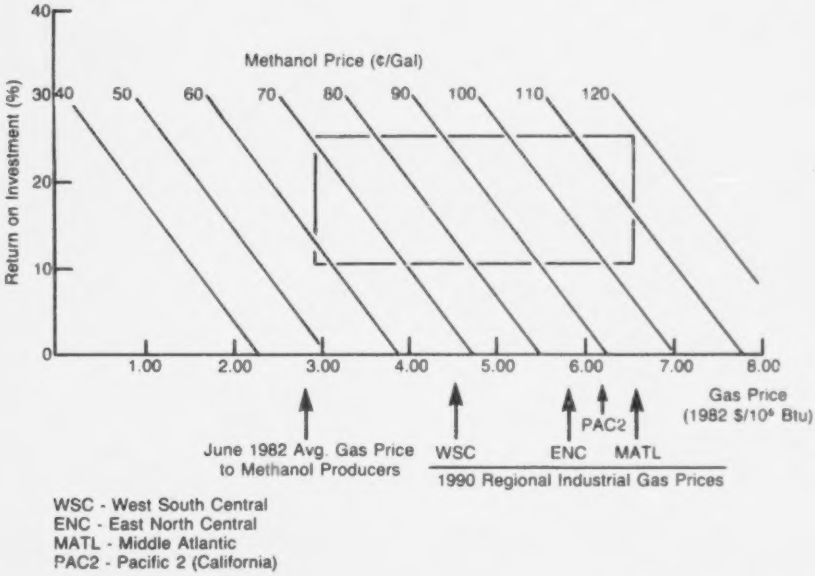


Figure 8. Impact of Gas Price on Methanol Plant Return on Investment.

Production costs alone are not the only criteria that will determine the location of possible future methanol plants — transportation costs are also a factor. Transportation costs will depend on the mode of transportation, which, in turn, is determined by the production location and ultimate destination of the methanol. Today, the primary method for moving methanol from the Gulf Coastal region to Midwest and East Coast markets is by barge at recently quoted prices of \$0.05 to \$0.08/gallon. Transportation to major West Coast markets is by rail at a cost approaching \$0.15/gallon.[20] By comparison, projected regional natural gas price differentials in 1990 (and beyond) would add anywhere between \$0.15 and \$0.25/gallon to the methanol production costs. This implies that any new methanol from natural gas production facilities that could be needed if gasoline additive demand grew significantly would likely remain in the West South Central (Gulf Coastal) region. California is the only possible exception, with delivered costs from the Gulf Coast approaching local production costs.

Coal-based methanol production is technically feasible, but these plants are much larger and more capital intensive than the natural-gas-based technology. New contract coal prices range from \$35 to \$45/ton or \$1.70 to \$1.90/10^6 Btu. Assuming 93 percent stream factor and a ROI of 15 percent (conservatively low), Figure 9 indicates a methanol production cost from coal-based syngas of \$1.17 to \$1.20/gallon. These costs are equivalent to the current natural-gas-based technology at natural gas prices of \$7.40 to \$7.60/10^6 Btu.

The most recent methanol plant to come on stream is owned by Tennessee Eastman Company and uses coal-based syngas to make methanol, which is reacted with by-product acetic acid to produce methyl acetate. The methyl acetate is catalytically reacted with carbon monoxide to produce 500 million pounds per year of acetic anhydride, which is further processed into cellulose esters used in photographic film, plastics, cigarette filters, and textile yarns. Although methanol from coal is generally more costly than methanol from natural gas, Tennessee Eastman's situation is unique for several reasons. Because of economies of scale, a coal-based plant has to be ten times the size of one that feeds on natural gas, and Eastman's requirement for acetic anhydride is large enough to justify the plant scale that's necessary. Furthermore, the facility is close to large sources of coal and enables the company to shut down half of its existing, oil-to-ethylene-based acetic anhydride capacity. At current prices of \$0.20/lb for ethylene, the carbon in ethylene is two to three times more expensive than the carbon in coal-based syngas.[21]

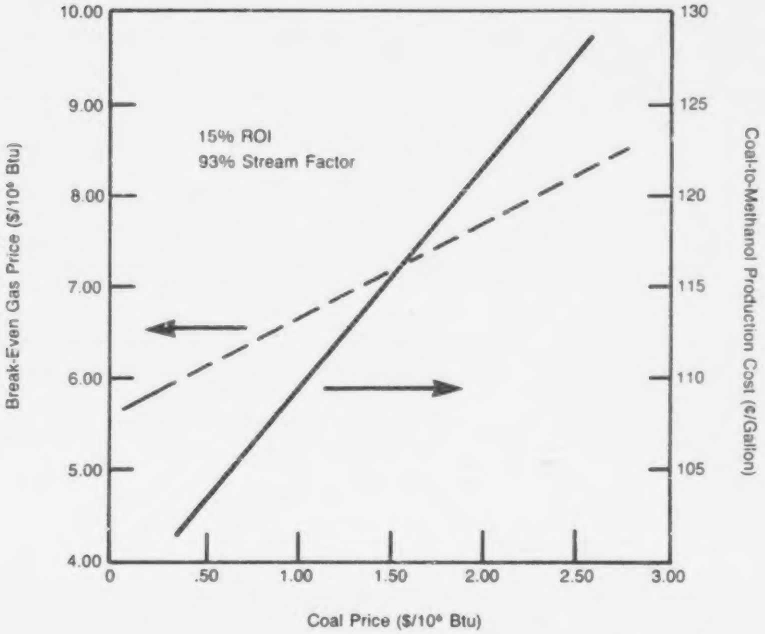


Figure 9. Coal-to-Methanol Production Costs and Break-Even Gas Prices (1982 $).

As a result of the current overcapacity of methanol production facilities in the U.S. and the institutional and oil price factors restraining growth in the fuels market, no new methanol plants are expected in the United States for the remainder of this decade. Any increase in methanol demand over this period should easily be supplied by existing capacity. Generally, coal-based methanol will not be a viable competitor until around the end of the century based on GRI's projections of natural gas and coal prices.

Similar to the situation faced by the ammonia industry, foreign producers of methanol from inexpensive gas sources will become an increasing threat to domestic production. Although no new capacity is expected in the United States, world capacity by 1990 is expected to reach 10-11 billion gallons per year, more than doubling the 1980 capacity of 4.6 billion gallons.[22]

Some of this additional production may be consumed in the European automotive fuels market, which is currently moving toward wider use of unleaded gasolines.[23] Europe consumes 36 billion gallons of gasoline annually, over 80 percent of which is high-octane grade. With the move toward unleaded fuels, primarily for environmental reasons, the European Economic Community has proposed a limit of 10 percent alcohol by volume as an octane enhancer. Methanol would be limited to 3 percent and used with a cosolvent. This could mean an increased demand of about 1 billion gallons of methanol annually for the European fuels market by 1990.

Even with increased demand in Europe, methanol imports could hamper U.S. production. Import levels have risen over the past few years with 1984 imports estimated to be about 150 million gallons, up from a 1983 import level of 100 million gallons. Exports have declined proportionally to 50 million gallons estimated for 1984 from 100 million gallons in 1983.[4] As natural gas prices increase, so also will the economic potential for imported sources of methanol to supply any increases in U.S. demand.

Hydrogen (H_2)

Excluding hydrogen already accounted for in ammonia and methanol synthesis, U.S. industry consumes approximately 1,120 bcf of hydrogen annually. Although difficult to determine from available data sources, it is estimated that currently about 70-75 percent of this amount is the product of steam reforming of natural gas.[2] Much of the remainder is produced by purification of hydrogen by-product streams from various chemical conversion processes. In 1980 an estimated 820 bcf of hydrogen was produced from natural gas, which accounted for the consumption of 205 bcf of feedstock methane, second only to that of ammonia. On a Btu basis, steam reforming of natural gas requires equivalent amounts of feedstock and fuel. Fuel is used primarily for steam generation. As shown in Figure 10, however, the largest users of hydrogen from natural gas are refineries and large chemical producers, many of whom have waste steam and by-product fuels available to reduce their natural gas fuel requirement. Thus, it is estimated that only an additional 100 bcf of natural gas is consumed as a reformer fuel.

Of the 820 bcf of hydrogen produced from natural gas in 1980, about 130 bcf, or 63 percent, was consumed in oil refining processes. In the past, many refiners had excess by-product hydrogen, which was often burned to satisfy process heater fuel requirements. This situation is now changing, and as U.S. refiners move toward processing lower quality crudes, many are running into a hydrogen deficit. While refiners obtain vast quantities of hydrogen from the crude oil they process, many of them still find this insufficient to meet their required demand. The net balance, however, is a function of the type of crude being processed and the slate of products produced by the refiner.[24]

Catalytic reformers that convert naphtha into benzene and other high-octane components are the biggest single source of by-product hydrogen at refineries, releasing 500-900 cubic feet of hydrogen per barrel of naphtha feed. Present U.S. capacity for catalytic reforming is 4 million barrels per day, so at full capacity the U.S. refining industry has anywhere from 700 billion to 1.3 trillion cubic feet of by-product hydrogen available from this source. But refineries also consume large amounts of hydrogen. Thus, refiners have had to install an additional 1 trillion cubic feet per year of hydrogen capacity from various feedstock sources.

Refinery requirements for hydrogen are growing as they are increasingly called upon to process heavy crudes. Heavy crudes contain large quantities of sulfur that must be removed by hydrodesulfurization. At the same time, the refinery product slate includes higher percentages of lighter products. In effect this means that the ratio of hydrogen to carbon atoms in the final slate is increasing. Hydrogen-to-carbon ratios can be increased either by adding hydrogen or removing carbon, and refiners do both. Some carbon is removed by employing a number of processes on residual oil including visbreaking, deasphalting, and delayed coking. But an increasing number of refiners are beginning to add hydrogen in order to maximize high-value final products.

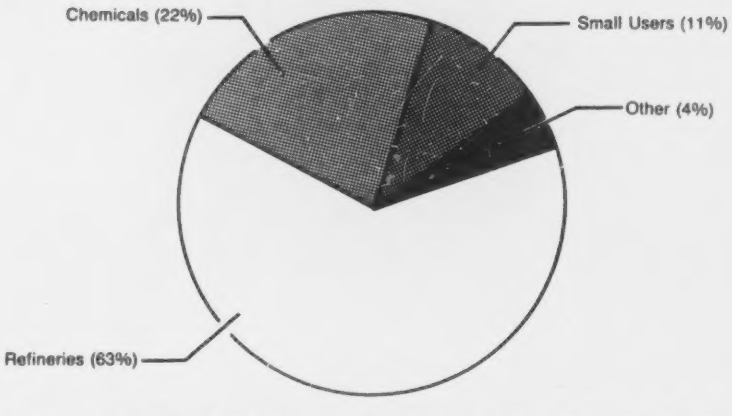


Figure 10. 1980 U.S. Demand for Hydrogen from Natural Gas, Excluding Hydrogen for Ammonia and Methanol Production (820 bcf of H_2).

Hydrocracking and hydrodesulfurization units have the largest hydrogen requirements. Hydrocrackers will use 1500-2000 cubic feet of hydrogen per barrel of heavy crude. Hydrodesulfurization units, on the other hand, require 200-500 cubic feet of hydrogen feed per barrel to remove sulfur and improve the color of the higher distillates. On net balance, a 100,000 barrel per day refinery needs upwards of 60 million cubic feet per day of hydrogen to process a dirty crude. About 15 million cubic feet per day is readily available from the process. The remaining 45 million cubic feet per day must either be made or recovered from tail gases, which contain spent hydrogen from hydrotreating processes.

When make-up hydrogen is needed, steam reforming of natural gas is the preferred method of production. Steam-reformed hydrogen at the refinery site might currently be valued at about $3.50 per thousand cubic feet.[25] Adding hydrogen to a heavy crude can upgrade its value by $5-$7/barrel, which, on a net-back basis, plays an important role in the prices quoted for various quality crudes by OPEC.

While steam reforming of natural gas is now the preferred method of making supplemental hydrogen in refineries, partial oxidation of heavier feedstocks may offer operational advantages in some cases. Basically, partial oxidation is a controlled combustion process that burns hydrocarbons in an oxygen-deficient atmosphere, converting the hydrocarbon to carbon monoxide and hydrogen. The technique requires the capital and operating costs of an air-separation plant to provide the oxygen. Although partial oxidation may not currently be economical on a widespread basis, it does offer the advantage of being able to handle a range of feedstocks including crude oil and residuum. Given the dynamic nature of refinery economics, the flexibility of partial oxidation may be beneficial at some locations.

The future demand for hydrogen in refining operations is extremely difficult to project because of variabilities in crude quality, product slate and geographic location. The demand for natural gas as a feedstock for refinery hydrogen production, therefore, is even more tenuous and additional analyses are needed to make an accurate forecast.

The situation for large chemical facilities that use hydrogen produced from natural gas is not too dissimilar from that of the refineries. In 1980 large chemical producers consumed 22 percent (180 bcf) of hydrogen manufactured from natural gas. Many of these firms also consumed as process feed or fuel additional amounts of hydrogen generated as a by-product in a variety of processes. By-product hydrogen is worth $2.00-$3.00 per thousand cubic feet, depending on its source. As a fuel it has only one third the Btu value of natural gas and is equivalent to natural gas priced at $6.00-$9.00/10^3 cf.

With industrial natural gas prices generally below this level, many chemical companies are reevaluating their uses of by-product hydrogen as fuel. Again, the net impact on natural gas demand is almost impossible to estimate. The simplest alternate use of excess by-product hydrogen is to sell it to a hydrogen merchant for purification and resale to other users. If natural gas is the alternative fuel, then the chemical firm would require an additional 320 cubic feet of natural gas for every 1000 cubic feet of by-product hydrogen fuel displaced. On the other hand, if the by-product hydrogen displaces steam reforming of natural gas as a source of merchant hydrogen, then the merchant's demand for natural gas would be reduced by about 500 cubic feet for every 1000 cubic feet of by-product hydrogen received.

Most merchant hydrogen is purchased and consumed by a variety of small users, together composing about 15 percent of the demand for hydrogen from natural gas. Small users include specialty chemicals, pharmaceuticals, edible fats and oils, metals, electronics, and float glass industries. Not all hydrogen consumed by this segment of the market is purchased from hydrogen merchants. Many small users in the foods, metals, and specialty chemicals industries have plant hydrogen demands in excess of 100-150 million cubic feet per year making it economically viable to produce their requirements onsite by steam reforming of natural gas. The pharmaceuticals, electronics, and float glass industries, on the other hand, purchase most of their hydrogen requirements. Of the more than 100 bcf of hydrogen consumed by small users, about half is supplied by hydrogen merchants.

Prices paid for merchant hydrogen depend on the users' demand, transportation costs, and level of purity required. In general, customers with demands less than 1 million cubic feet per year pay between $30 and $60/10^3 cf. Users with larger demands may pay down to around $8.00/10^3 cf for bulk deliveries, while "over the fence" pipeline hydrogen currently sells for $3.50-$4.00/10^3 cf.[25,26]

The electric industry has suggested that advanced electrolysis could be a cost-competitive onsite technology for many consumers of merchant hydrogen. Figure 11 shows the hydrogen production costs from an advanced electrolysis process assuming 90 percent cell efficiency and 4.5¢/kWh electricity costs. Also shown are the production costs for hydrogen from natural gas reforming. The crossover point for the two curves falls at about 100 million cubic feet per year; needs below that point are served primarily by hydrogen merchants. The future of the advanced electrolysis technology depends on a number of critical factors. First, electrolysis cell efficiencies are now typically around 70 percent, and industrial elec-

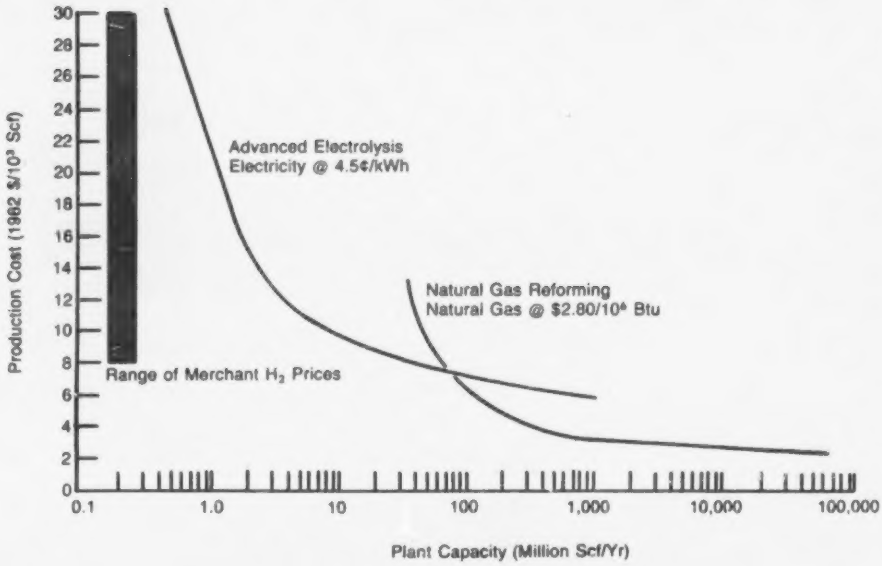


Figure 11. Hydrogen Production Costs Versus Plant Capacity for Industrial Users.
(Source: Adapted from Ref. 26.)

tricity prices for 1990 are forecast to reach 6.5¢/kWh. These two factors would add about $\$3.25/10^3$ cf of hydrogen to the electrolysis costs. In the same time period, natural gas prices could rise to $\$6.00/10^6$ Btu, adding only $\$2.00/10^3$ cf of hydrogen to the reformer costs.

The other factor influencing the future of advanced electrolysis is the willingness of many small users to undertake onsite hydrogen production as part of their operations. For many small users, the pattern of hydrogen demand and purity requirements may be the key factors influencing the make or buy decision. Where only intermittent demand exists, or where extremely high purity is required (e.g., in the electronics industry), it may be more attractive to purchase merchant hydrogen.

The future of the hydrogen market, particularly that part of the market produced from steam reforming of natural gas, is highly uncertain. The complexities of the largest segments of the market — refineries and large chemical producers, which account for 85 percent of the hydrogen demand — make it difficult to project meaningful forecasts. The merchant hydrogen market is probably safe from the threat of advanced electrolysis, and many of the high-value-added industries that it serves are expected to continue to grow. Some of the natural gas reforming, which supplies most of this market segment, however, could be displaced by by-product hydrogen now used as fuel. But this loss could also be buffered if natural gas is substituted for the hydrogen fuel.

Carbon Black (C)

Carbon black is a very finely divided, essentially nonporous carbonaceous material that is produced in a precisely controlled pyrolytic process. Carbon black ranges from fine particles such as those used in tire treads to the coarser particles used in the main body of tires.

Almost 90 percent of carbon black produced goes into reinforcing and compounding agents for rubber. Motor vehicle and aircraft tires account for roughly 60-65 percent of carbon black consumption in a given year. Carbon black increases strength, resilience, and abrasion resistance of rubber, as well as adding color. The rubber compound in modern tires contains perhaps 30-40 percent carbon black. Carbon black is also used in printing inks, plastics, coatings, and paints.

Carbon black is produced from both oil and natural gas feedstocks. Oil is by far the dominant feedstock, accounting for more than 90 percent of the 1.2 to 1.5 million tons per year of carbon black production. Natural gas feedstock makes up the remainder and in 1980 accounted for the consumption of 22 bcf of natural gas feedstock and an additional 2 bcf natural gas fuel. Most of the carbon black plants, 16 of 23, are located in Texas and Louisiana.

Carbon black is currently produced by two basic conversion processes, partial oxidation and cracking. Cracking is used by only one natural-gas-based plant in the United States with a capacity of 50 million pounds per year. Partial oxidation is used in all other oil-and-gas based facilities. During the 1960's and 1970's, partial oxidation of oil gained popularity because of better product quality and superior economic performance relative to partial oxidation of natural gas.

Carbon black production reached a peak in 1978 when 1.7 million tons were produced in the United States. By 1981 production had declined by roughly 18 percent and by 1982 production had declined more than 25 percent from the 1978 level. The decline in output of carbon black is due to reduced consumption in motor vehicle tires and mechanical rubber goods, a decline in exports, and inventory reductions on the part of carbon black producers and tire manufacturers. Although overall tire shipments increased slightly in 1982 relative to 1981, tire production declined by almost 10 percent as tire manufacturers reduced inventories built up in anticipation of a rubber workers' strike early in 1982. Exports of carbon black declined by 40 percent between 1981 and 1982 due to the worldwide recession.

The lower level of demand for carbon black in the face of general overcapacity resulted in a number of plant closings during the early 1980's. Nearly 500,000 tons of carbon black capacity has been permanently shut down since 1979 as producers sought to reduce costs. Operating rates in 1982 averaged roughly 70-75 percent of capacity. In addition to overcapacity and reduced demand, rising feedstock and energy costs affected profitability as actual selling prices were heavily discounted.[27]

With about 60 percent of consumption in tires, the outlook for carbon black is dependent on the continuation of a variety of economic and technical trends with regard to motor vehicle production and use that have been underway for the past decade. The transition to long-wear radial tires for automobiles will continue, with radials being installed on all new domestically produced cars and most imports. The same trend is underway in the truck tire market. Although radial tires cost more than bias-ply tires, the increased cost is offset by longer tire life. Increased energy costs in the early 1980's also led to fewer miles driven and less tire wear. Also affecting carbon black consumption are the federally mandated vehicle fuel consumption goals, which are prompting automobile downsizing. Smaller cars mean smaller tires. At the very best, demand for carbon black in the United States will be flat during the rest of the decade. More likely, there will be a slow, steady decline in the demand for carbon black.

Exports and imports of carbon black have, in the past, been a relatively small percentage of total domestic production. While production in 1982 is estimated at 1.2 million tons, exports during that period were only 38,500 tons, while imports were estimated at 17,500 tons.

The situation will change, however. Foreign competition in the carbon black market is likely to increase in coming years, with much of the competition coming from Mexico. Plans in Mexico to increase carbon black production have alarmed domestic carbon black manufacturers, especially in depressed states like Louisiana. It is expected that foreign carbon black, either in granular form or directly in tires, will be imported into the United States in increased quantities. Imported carbon black could reach 5 to 10 percent of domestic consumption in this decade, which, at current production levels, would be a three to sixfold increase in imports.

As a result of these factors, natural gas consumption as a feedstock in the production of carbon black will fall dramatically from its 1980 level of roughly 22 bcf as reported by the Bureau of Census. Residual oil is clearly the preferred feedstock. Oil-based processes offer greater advantages in controlling product quality, which led carbon black producers to switch to oil over the past two decades even in the face of relatively low gas prices. This being the case, it is difficult to envision natural gas being used as a feedstock to produce carbon black in the declining and more competitive market of the future.

Outlook for Bulk Chemicals from Methane

The past several years have seen dramatic decline of interstate natural gas sales for feedstock (and associated fuel) purposes. Most of the impact felt by interstate pipelines has been a result of the shutdown of a quarter of the U.S. ammonia industry as demand fell and gas prices rose to uneconomic levels.

At best, the market outlook for bulk commodity chemicals produced from feedstock methane is uncertain. In the near term, possible increases in methanol and hydrogen production, representing just over 35 percent of the current feedstock and associated fuel uses, may tend to offset further anticipated declines in ammonia and carbon black production, which make up most of the remaining use of methane feedstock. Beyond the near term, even with the potential for a large growth in methanol demand as a fuel additive, domestic production of ammonia, methanol, and carbon black is significantly threatened by foreign producers who have access to natural gas supplies valued at a factor of 10 less than new contract U.S. natural gas prices. International market and gas cost factors so dramatically influence the future outlook of U.S. bulk chemicals produced from methane that incremental improvements to existing processes offer little optimism for changing the near-term outlook.

Because of transportation costs, hydrogen is the only bulk chemical produced from methane that is not threatened by foreign competition. The small merchant hydrogen portion of this market is reasonably safe from coal and electrolytic technologies. However, the future of the majority of hydrogen production from natural gas depends heavily upon intricate supply, demand, and process balances inherent to the U.S. refining and chemicals industries.

R&D Status

The fundamental problem in converting methane (and most paraffinic hydrocarbons) into other commercial products is the chemical stability of the methane molecule. The bonds in methane are among the most unreactive in hydrocarbons, with its tetrahedral geometric and electronic structure making it difficult to react with other molecules. Reactions that methane does undergo are usually irreversible and difficult to control. Typically, it reacts only with highly active substances, or under very vigorous conditions. Examples of such reactions include:

combustion or complete oxidation

$$\mathrm{CH_4 + 2O_2 \longrightarrow CO_2 + 2H_2O}$$

controlled oxidation

$$\mathrm{6CH_4 + 6O_2 \xrightarrow{1500°F} \underset{\text{(acetylene)}}{2(CH = CH)} + 2CO + 10H_2O}$$

hydrolysis or steam reforming

$$\mathrm{CH_4 + H_2O \xrightarrow[\text{catalyst}]{850°F} CO + 3H_2}$$

halogenation

$$\mathrm{CH_4 + X_2 \longrightarrow CH_3X + HX;\ x = F, Cl, Br}$$

The chemical industry invests billions of dollars annually on process-related research looking for more controllable and cost-effective methods for producing useful commercial products. After many years of neglect, there has been a recent worldwide interest in C_1 chemistry — reactions of methane, carbon oxides, and other single-carbon compounds.[28,29] For example, the Japanese government and industry is supporting a multimillion dollar R&D effort in this field. Various petrochemical companies in the United States are also looking for new and dependable feedstocks. Benson[30] has proposed a new process to make useful commercial products from methane without reforming to carbon monoxide and hydrogen. The Benson Process, developed at the University of California Hydrocarbon Research Institute, involves the chlorination of methane to chloromethane, followed by decomposition of the chloromethane to ethylene* and acetylene. The hydrogen chloride formed in each of these steps must be recycled in an economical way in order to commercialize the process.

The Soviets[29] claim to have discovered new reactions called oxidative methylation, which involve reactions between C_1 to C_4 alkanes (paraffins) and compounds containing a methyl group. In general, compounds of the type RCH_2 (where R can be a number of entities) are reacted with methane in the presence of oxygen to produce $RCH_2\text{-}CH_3$, $RCH=CH_2$, or RH. The Soviets claim that the oxidative methylation of toluene or acetonitrile has economical promise, and that natural gas as withdrawn from the well is ideal for this application because it contains the required C_1 to C_4 initiating alkanes. One of the chief attractions of oxidative methylation could be the replacement of natural gas for ethylene as a feedstock for a number of petrochemicals. In the United States, researchers at Texas A&M University have demonstrated the partial oxidation of methane to methanol by nitrogen oxides.

Controlled activation of carbon-hydrogen bonds is an important area of growing interest in catalytic research. The goal of this research has been to activate paraffinic carbon-hydrogen bonds selectively by catalytic means and to substitute or insert another molecule into the paraffin. Researchers hope that, if this can be done selectively, it may provide routes to further hydrocarbon conversions that avoid the high energy requirement of oxidation while also providing greater selectivity and control over important hydrocarbon conversions. Thus far there has been very limited success with carbon-hydrogen bond activation. Researchers at DuPont have used lutetium complexes to exchange hydrogen atoms on the methane molecule. Other researchers have successfully added an iridium complex to various normal, cyclic, and isoparaffins. Although none of the reactions that have thus far been achieved have any industrial application for petrochemicals, they are significant in a basic research context and may help focus further research in catalytic hydrocarbon reactions.[32,33,34]

Other, more-near term catalytic research is also underway. For example, TRW, Inc., under contract with the Department of Energy, is developing a catalytic process that would produce a mixture of carbon monoxide and hydrogen (syngas) with an optimum ratio of CO:H for making methanol. The process, called Selox (for selective oxidation), may be an improvement over the current steam reforming process, which, by contrast, generates too much hydrogen for methanol and other liquid fuels.[35] A number of major oil companies are also active in catalytic research. Mobil Oil Company, for example, is involved in a joint venture with the New Zealand Government to produce nearly 5 million barrels per year of high-octane unleaded gasoline. The process involves methanol synthesis from natural gas, followed by conversion of methanol to gasoline using Mobil's ZSM-5 zeolite catalyst. Gulf Research and Development Company has also developed a catalytic process that produces nearly equal quantities of naphtha and diesel fuel oil from natural gas. This process is entering the demonstration phase and is targeted for unmarketable remote gas locations.

Biotechnology is another important area of long-term research. Recent demonstrations that specialized organisms can be "bred" to perform a myriad of tasks have propelled the science of biotechnology to the forefront. Further development of this technology is likely to have significant impacts on the energy industry. Although no bioconversion process currently exists based on methane, biotechnology has practical applications in the pharmaceutical and agricultural industries. Enzymes have also been developed that aid in the clean-up of oil spills. The development of bioconversion processes for methane could, in the long term, help to replace the current thermally driven chemical conversion processes with less-energy-intensive biological routes.

In the near term, biotechnology could indirectly affect the chemical feedstock industry and, specifically, natural gas, through the development of nitrogen-fixing bacteria or the modification of crops to assimilate nitrogen more readily. The possibility of genetically altering a seed that would reduce requirement for fertilizers would result in decreased ammonia and, subsequently, decreased methane demand. The extent of the effect that bacterial innoculants or genetically altered seeds will have on the U.S. and world fertilizer industry, however, is unknown at this time.[36]

Implications

The overwhelming magnitude of market factors in shaping the near-term future of feedstock methane suggest that there is little opportunity for gas industry research on existing commodity chemical processes to significantly alter these trends. The petrochemical industry's continued attention to process and market optimization is perhaps the best near-term route to improvements in existing processes.

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* Ethylene is a major petrochemical feedstock for many commercial products, and it ranks sixth among U.S. bulk chemicals. About 12-15 million tons of ethylene are produced annually in the U.S. by cracking natural gas liquids, naphtha and heavier hydrocarbons.

New processes, such as the Benson process, applied catalytic research, or other routes to manufacture specialty chemicals from methane may offer some future opportunities. The outlook presented for bulk chemicals from methane is based on current technology and near-term improvements. New reactions and processes that could more efficiently convert methane into liquid fuels or other commercial chemicals, or small onsite units using catalytic conversion, partial oxidation or biological techniques could affect future production costs and markets. The partial oxidation of methane to methanol by nitrogen oxides, for example, has been reported by researchers at Texas A&M University. While the commercial potential for this process may be limited, it is one of several notable examples of new advances in methane conversion chemistry.

New avenues to methane conversion should be pursued when there is reasonable expectation that successful results will lead to technical or economic benefits for the gas industry and its customers. Presently, much of the gas used in the petrochemical industry, especially in the case of methanol, is sold directly by producers and is therefore outside of GRI's jurisdiction. Methanol, for example, is produced in large plants located near sources of natural gas by inefficient means in which methane is first broken down into carbon monoxide and water. Concepts like direct catalytic oxidation of methane to methanol or other liquid fuels in small onsite units suggests a potential for increasing the use of pipeline-transported natural gas. Onsite production of other smaller volume chemicals, such as hydrogen cyanide, could offer the same potential benefit for interstate natural gas, in addition to reducing overland shipments of toxic or hazardous materials.

Perhaps the greatest opportunities for GRI research are associated with carbon-hydrogen bond activation and bioconversion. There is currently little known about these mechanisms, and basic research to improve the understanding of the methane molecule holds the potential of significant long-term benefits to the regulated gas industry and its customers.

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Appendix B

ENERGY ANALYSIS

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1985-7 April 26, 1985

THE OUTLOOK FOR AMMONIA PRODUCTION IN THE U.S.

Digest

For the past decade, it has been the view of most analysts that ammonia produced from new U.S. plants would be unable to compete in the future with ammonia imported from new plants abroad. Recent events have called into question the underpinning assumptions of this conventional view.

The decontrol of new natural gas prices in the U.S. has been accomplished, and natural gas prices are declining. Similarly, the outlook for U.S. natural gas production is far brighter than had been expected. Annual U.S. additions to proved natural gas reserves are now at twice the level of a decade ago. When conservation effects are considered, the supply of natural gas available for new uses in the U.S. is expected to continually increase.

At the same time, the capital (construction) and other cost components of ammonia production have been inflating more rapidly than the feedstock components worldwide -- particularly in developing nations. Since U.S. ammonia production already had a capital cost advantage (due to existing infrastructure, proximity to suppliers, etc.), the increasing relative importance of the capital component has worked to the advantage of U.S. production.

As a result of these developments, the economic attractiveness of the U.S. as a site for new ammonia capacity has increased markedly. The national average cost of ammonia produced from a new U.S. plant beginning construction today is estimated to be between 5% more to 63% less than the comparable cost of ammonia imported from newly constructed foreign plants. If the dollar returns to "normal" historical levels of the early-and mid-1970s, the relative economic attractiveness of new U.S. ammonia plants will be further enhanced.

Approximately 1.8 million metric tons of idle U.S. ammonia capacity has recently been reactivated (an additional 1.8 million metric tons are still idle). It seems extremely likely that as the world ammonia market tightens, the U.S. will be an attractive source of incremental capacity.

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THE OUTLOOK FOR AMMONIA PRODUCTION IN THE U.S.

A. INTRODUCTION

For the past decade, it has been the view of most analysts that ammonia produced from new U.S. plants would be unable to compete in the future with ammonia imported from new plants abroad. Consequently, it has been believed that few, if any, new ammonia plants would be built in the U.S.

The principal rationale for this view was based upon a projected continued growth in the difference between natural gas fuel and feedstock prices in the U.S. and many export-oriented gas producing countries. Gas prices in the highly developed U.S. market had risen sharply in the 1970s under federal controls, and much of U.S. production was to be price decontrolled on January 1, 1985. In contrast, natural gas was thought to have little value in those producer countries with relatively undeveloped transportation and utilization infrastructures. The resulting difference in feedstock costs between U.S. and foreign ammonia plants was expected to more than offset the many cost advantages of U.S. ammonia producers (e.g., proximity to market).

Recent events have called into question the underpinning assumptions of this conventional view. The decontrol of new natural gas prices in the U.S. has been accomplished, and natural gas prices are declining. Similarly, the outlook for U.S. natural gas production is far brighter than had been expected. Annual U.S. additions to lower-48 states proved natural gas reserves are now at nearly twice the level of a decade ago. When conservation effects are considered, the supply of natural gas available for new uses in the U.S. is expected to continually increase. Finally, the capital (construction) and other cost components of ammonia production have been inflating more rapidly worldwide than the feedstock components -- particularly in developing nation locations. Since U.S. ammonia production already had a capital cost advantage (due to existing infrastructure, proximity to suppliers, etc.), the increasing relative importance of the capital component has worked to the advantage of U.S. production.

The purpose of this analysis was to evaluate the economics of ammonia production for the U.S. market.

B. EXECUTIVE SUMMARY

The fundamental economic tradeoff between foreign-sourced versus U.S.-sourced ammonia has shifted. Even with today's strong dollar, the economic attractiveness of the U.S. as a site for new ammonia capacity has increased markedly. It seems extremely likely that when new world ammonia capacity becomes necessary, the U.S. will be an attractive site.

- The national average cost of ammonia produced from a new U.S. plant beginning construction today is estimated to be between 5% more to 63% less than the comparable cost of ammonia imported from newly constructed foreign plants. (See Exhibit B-1).
  - These ammonia cost differentials incorporate estimated costs for nine potential producer nations. For developing countries, they also include a range of costs based upon site-specific variations, e.g., degree of existing infrastructure.
  - Compared to an estimated "plant gate" cost of $256 per metric ton (1985 dollars) for ammonia produced from new plants in the U.S., the cost ranges vary from $240-349 per metric ton in the Western Hemisphere and from $256-405 per metric ton in the Eastern Hemisphere (see Exhibits B-1 and C-2).
- The 1-2 million tons of idle U.S. ammonia capacity will be the first candidate as an incremental source of ammonia supply. According to the Fertilizer Institute, the average plant investment in currently operating U.S. ammonia capacity for the year ended June 30, 1984 was $114 per short ton ($125 per metric ton) -- half of the estimated cost of new U.S. capacity. The average plant gate cost of ammonia produced from plants in the U.S. as of that time was $120 per short ton ($132 per metric ton). While the cost of producing ammonia from the idle capacity may be somewhat higher, the World Bank projects that two-thirds of the idle capacity will reopen.
  - According to the U.S. Department of Commerce, about 6 million short tons (5.4 million metric tons) of U.S. ammonia capacity were closed from 1979 to 1983. Two million tons (1.8 million metric tons) were closed permanently, over two million tons (1.8 million metric tons) have been reactivated, and the balance will be reactivated when the price of U.S. ammonia reaches about $200 per short ton ($220 per metric ton).[24]
- Measured against a market basket of seven currencies, the value of the U.S. dollar has increased over 65% between 1980 and 1985. If the dollar returns to "normal" historical levels of the early-and mid-1970s, the relative economic attractiveness of new U.S. ammonia plants will be further enhanced (see Exhibit B-2).

EXHIBIT B-1

ESTIMATED COST OF AMMONIA FROM NEW PLANTS

	USA			
	existing capacity	new capacity	Other Western Hemisphere	Eastern Hemisphere
CAPITAL INVESTMENT*				
(New Capacity: Million 1985 U.S. Dollars)	--	$185	$206-282	$209-282
(Idle Capacity: Million nominal dollars incurred when plants were built)	41	--	--	--
PRODUCTION COSTS (1985 U.S. Dollars Per Metric Ton)				
Capital Recovery	8	103	115-178	132-178
Natural Gas Fuel & Feedstock	99	96	32- 96	32- 96
Other Costs	25	57	57- 74	57- 74
TOTAL PRODUCTION COST	132	256	219-284**	221-320**
SHIPPING AND TERMINALLING (1985 U.S. Dollars Per Metric Ton)	--	--	25- 65	35- 95
TOTAL LANDED COST IN USA (1985 U.S. Dollars Per Metric Ton)	$132	$256	$244-349**	$256-405**

---

* Capital investment includes offsites. Cost for presently operating U.S. capacity taken from Ammonia Production Cost Survey -- Year Ended June 30, 1984 (Washington, D.C., The Fertilizer Institute, September 27, 1984). Figures were converted from short tons to metric tons by A.G.A.

** Columns are not additive since, for example, the upper range of capital recovery cost does not occur in a country in which natural gas costs are in the upper range.

EXHIBIT B-2

EXCHANGE VALUE OF THE DOLLAR
(Weighted Average Exchange Rate Index In 7 Major Trading Partners)
(1972 = 100)

Actual		Forecast	
1972	100.00	1985	144.1
1973	91.6	1986	136.1
1974	95.6	1987	125.0
1975	93.9	1988	117.5
1976	101.7	1989	114.9
1977	101.2	1990	112.1
1978	89.8	1991	108.1
1979	87.2	1992	104.5
1980	86.9	1993	101.3
1981	99.2	1994	97.6
1982	115.7		
1983	127.0		
1984	139.9		

Source: *Long-Term Forecast* (Philadelphia, PA, Wharton Econometric Forecasting Associates, December 1984), p.52; and, *Long-Term Historical Data* (Philadelphia, PA, Wharton Econometric Forecasting Associates, September 1984), p.20.[23]

EXHIBIT B-3

WORLD BANK
NITROGEN FERTILIZER SUPPLY/DEMAND BALANCE BY REGION
(Million Metric Tons of N)

REGION	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89	1992/93
Developed Market Economies	- 1.50	- 1.28	- 0.60	- 0.73	- 1.48	- 2.07	- 4.76
Developing Market Economies	- 1.98	- 1.77	- 1.33	- 1.16	- 1.31	- 1.14	- 5.64
Centrally Planned Economies	3.46	3.66	3.52	3.25	2.91	2.30	- 1.90
TOTAL WORLD	- 0.02	0.61	1.59	1.36	0.12	-0.91	-12.30

Source: William F. Sheldrick, World Fertilizer Review and the Changing Structure of the World Fertilizer Industry - a paper presented at the Australian Fertilizer Manufacturer's Conference, Perth, Australia, Washington, DC, Industry Department, World Bank, November 1984, p. 8.

Note: A minus indicates a current or projected nitrogen deficit. Nitrogen is the principal element in ammonia from a fertilizer perspective.

- The results of this analysis strongly imply that, of probable sites for new ammonia plants, only those in the Western Hemisphere (and possibly Nigeria) could expect to compete with U.S. sites. Most sites in the Middle East, and Austral-Asia are unlikely to be able to compete for the U.S. market. Even in the Western Hemisphere, only sites with the most favorable circumstances (such as a well-developed infrastructure and low gas price) are likely to be competitive.
    - New Canadian projects face higher capital costs than U.S. projects, and gas costs that are relatively close to (but lower than) U.S. gas costs (see source 1, page 19). In addition, Canadian ammonia faces high rail delivery and terminalling costs. On the other hand, Canadian sites are relatively close to regional ammonia markets in the U.S., and the Canadians have demonstrated their ability and willingness to be competitive. In all probability competition between new U.S. and Canadian ammonia plants will be severe -- but Canada does not have an advantage.
    - New Mexican and Trinidadian projects generally face higher capital investment costs and lower utilization rates than projects in the U.S. or Canada. Many of the usual factors which drive up construction costs in developing nations are at work in Mexico and Trinidad, e.g., high general inflation, remoteness from suppliers, etc. Ammonia from many potential Mexican and Trinidadian ammonia projects will not be competitive in U.S. markets. On the other hand, in those situations where there is an existing support infrastructure, the Mexican and Trinidadian construction costs may be quite similar to those in Canada. Growing infrastructure and experience, low imputed gas costs to ammonia plants, and proximity to the U.S. market mean that competition among Mexican, U.S. and possibly Trinidadian ammonia will be significant.
    - The U.S.S.R. remains an uncertainty, since the constraints of capitalist economics may not necessarily apply. It seems unlikely, however, that Soviet ammonia from new plants will be competitive (without government subsidy) in U.S. markets in the foreseeable future.
- There appears to be a reasonable consensus among analysts that new additions to world ammonia capacity will be required sometime in the 1988-1992 timeframe. Given at least a four year planning and construction period, serious planning for new plant construction seems likely to be needed within the next two or three years (see, for example, Exhibit B-3).

- In addition to the need for new plants to meet growing demand, the World Bank/UNIDO/FAO Industry Fertilizer Working Group points out that substantial new capacity will be needed to compensate for retirements of existing plants. The Group concludes that as many as eighty new plants may be needed worldwide in the 1988-1994 time period.
- The Group also points out that developing nations will be increasingly in nitrogen deficit in the second half of the 1980s, and will depend increasingly upon imports from Eastern European countries.

C. PROJECTED AMMONIA ECONOMICS

The purpose of this section of the analysis was to assess the economics of producing ammonia from alternative world locations to service future U.S. ammonia requirements.

1. Costing Methodology and Assumptions

In this analysis the estimated landed cost in the U.S. Gulf of anhydrous ammonia produced from new plants in nine alternative worldwide locations was compared to the estimated cost of ammonia from both existing idle plants and new plants sited in the U.S. Gulf. The costs were based upon new plants to be ordered in 1985-86 and operational in 1988-89.

The cost estimates in this analysis were all derived from published documents and ammonia trade sources. None of the cost estimate data was provided by A.G.A. members. All of the costs were necessarily rough estimates, and would clearly be insufficient as a basis for ordering new plant capacity at any particular site. They are, however, considered to be meaningful for a general comparison.

a. Capital Cost of New Plants

The capital investments required to build new ammonia plants in various world locations were derived from two publications authored by William F. Sheldrick, Industry Department, World Bank: (i) World Fertilizer Review and the Changing Structure of the International Fertilizer Industry, a paper presented at the Australian Fertilizer Manufacturer's Conference, Perth, Australia, November 1984;[1] and (ii) Investment and Production Costs for Fertilizers, a paper presented at the Food and Agriculture Organization of the United Nations, Commission on Fertilizers, Ninth Session, Rome, Italy, February 19-22, 1985.[2]

The capital cost projections from sources 1 and 2 were based upon a standard plant with nameplate capacity of 1000 metric tons/day of ammonia and 1700 metric tons/day of urea. Offsites were included. A range of cost estimates reflected, among other considerations, the degree of existing infrastructure.

For the A.G.A. analysis, investment costs per ton of annual urea capacity (from source 1, page 24) were multiplied by 544,500 tons of urea/year nameplate capacity (from source 2, page 10) to derive the total capital cost for the ammonia/urea plant complexes. The cost of a 1000 metric ton/day nameplate ammonia-only plant was then derived from the cost estimates for the ammonia/urea plant complexes. This step required estimating the proportion of total costs attributable to ammonia, then adding adequate refrigerated storage and handling costs for a plant intended to export anhydrous ammonia, and finally escalating the 1984 source numbers to 1985 dollars.

The proportion of capital cost attributable to ammonia in this standard ammonia/urea complex was taken from study documents presented by the Division of Industrial Studies of the United Nations Industrial Development Organization (UNIDO) at the Fourth UNIDO Consultation on Fertilizers, New Delhi, India, January 23-27, 1984, as reported in "Capital Costs of Fertilizer Plants," Nitrogen, No. 149, May-June 1984, pp. 30-34.[3] The proportion used, 62.5%, was the proportion used (source 3, p. 33) in a standard UNIDO ammonia/urea complex (1000 mt/d:1700 mt/d). A survey of actual cost experience in nitrogenous fertilizer plants, reported in source 3, showed a mean average proportion attributable to ammonia of 54%, and a mean average attributable to ammonia plus all utilities (ammonia plus urea) of 74%. The 62.5% of total cost attributed to ammonia in the UNIDO model seemed quite consistent with the results of the survey.

The cost of storage in the standard UNIDO model was 5.0% of the total capital cost. This was increased to 10% to allow for the higher cost of anhydrous ammonia export storage as compared to urea storage. While this was admittedly a rough estimate, it seemed consistent with cost estimates for ammonia terminalling in the U.S. Gulf (as reported below), taking into account that, while ammonia storage is more costly than urea storage, the ammonia output of the standard plant is only 60% of the tonnage of the output when urea is the final product.

In order to escalate these capital cost estimates to a 1985 U.S. dollar basis two factors were considered. First, the 1984-85 increase in the value of the U.S. dollar as measured by an exchange rate index for seven major U.S. trading partners was projected to be 3.0% (Source: Long-Term Forecast, Philadelphia, PA, Wharton Econometric Forecasting Associates, December 1984).[4] Second it was possible to estimate the actual rate of escalation experienced in recent years in the dollar cost of 12 ammonia/urea plant complexes from source 3, page 34. Source 3 adjusted the capital costs of the 12 plants to a 1978 basis. By comparing the actual capital cost and the 1978 basis cost, and knowing the startup date, the average compound escalation rate of 3.7%/year was calculated for the 12 plants. When plants showing zero escalation were excluded, the average was 5.1%/year. On this basis, an intermediate figure of 4.5% was used to escalate from 1984 to 1985 dollars.

Working capital requirements were estimated at a net 60 days total costs in the U.S., Canada and Australia, and a range of 90-120 days costs elsewhere. Costs included capital recovery (under utilization assumptions described below) as well as fuel, feedstock, labor and other operating costs.

The annual charge for capital recovery (plant plus working capital) was calculated on a simple 12 year, 15% discounted cash flow project rate of return basis. For the sake of consistent comparison of all cases, tax considerations and debt/equity questions were not considered. This treatment may have tended to overstate the actual commercial cost of ammonia from new U.S. plants.

Average capacity utilization was assumed to be 90% for plants located in the U.S., Canada and Australia, and 80% elsewhere. While 90% utilization is a common goal (i.e., actual output equalling 90% of nameplate capacity), this level is reportedly seldom achieved in the early years of plant operation in developing nation locations. According to a recent article in Nitrogen magazine, "...70% operation from start-up is seldom achieved...To achieve reasonable economics the project would have to operate at better than 80% capacity from start-up, which is a very challenging target for a new plant in a developing country location, even if there is previous experience in this technology (Source: "New Investment -- the Cost and Price Conundrum," Nitrogen, No. 151, September-October 1984, page 6).[5] On the other hand, according to source 1, many developing nations are now ultimately achieving 90% utilization. The assumption of a "time value" average of 80% utilization for plants in developing locations thus seemed reasonable for the base case.

The annual capital recovery charge was divided by output (nameplate capacity multiplied by capacity utilization) to determine the capital charge per ton.

b. Plant Fuel and Feedstock Costs

For purposes of the base case the cost of natural gas to new ammonia plants was assumed to be \$3/MMBtu in the U.S. and Australia, \$2/MMBtu in Canada, and \$1/MMBtu elsewhere.

In the U.S. the average cost being charged to ammonia plants for the year ending June 30, 1984 was \$2.53/MMBtu according to Ammonia Production Cost Survey, Washington, D.C., The Fertilizer Institute, June 30, 1984, page 6.[6] The national average wellhead price of gas at that time was \$2.59/MMBtu according to the Natural Gas Monthly, Washington, D.C., U.S. Energy Information Administration, December 1984 Issue (published February 1985), page 23.[7] Given current market conditions -- a 15-20% gas deliverability surplus, large additional volumes available from Canada, and considerable price flexibility -- average real U.S. dollar wellhead and retail gas prices are projected in the current A.G.A.-TERA Base Case Analysis to be 15% lower and 12% lower, respectively, by 1987 than in 1984. A gradual increase is projected to return wellhead and retail prices to 1984 levels by the end of the century (Sources: A.G.A.-TERA Base Case 1985-I, Arlington, VA, American Gas Association, March 22, 1985;[8] and Historical and Projected Natural Gas Prices: 1985 Update, Arlington, VA, American Gas Association, March 15, 1985).[9] The assumption of a \$3/MMBtu average gas cost to new U.S. ammonia plants was, therefore, thought to be conservative for purposes of this analysis. Similarly, these charges were considered to be reasonable to conservative compared to current gas pricing in Australia.

In Alberta, existing Canadian ammonia plants have been reported to be paying \$1.50-\$2.00/MMBtu for natural gas. (Source: John Douglas, Tennessee Valley Authority, Muscle Shoals, AL, by private communication with the American Gas Association, April 10, 1985.)[10] Under the newly signed Western Accord, the Alberta border price for natural gas will be \$2.15/MMBtu until a new domestic pricing formula is established on or before November 1, 1985. (Souce: Canadian Federal, Provincial Governments Agree to Ease Controls on Petroleum Industry," International Gas Technology Highlights, Vol. XV, No. 8, April 15, 1985.)[11] Given the trend toward market-determined pricing in both the U.S. and Canada, there may be decreasing reason to expect a significant difference in the price of natural gas feedstock to ammonia plants between the two countries. In order to be conservative, however, the Canadian price was assumed to be \$2/MMBtu for natural gas to new plants.

The use of a \$1/MMBtu charge for gas to the new developing country ammonia plants was consistent with source 1, pages 18 and 24. Clearly, the cost to be charged is often somewhat arbitrary, particularly in the case of the U.S.S.R. Gas costs of 50¢/MMBtu or less have been reported for some projects in the past (source 5, page 5). The \$1/MMBtu charge for new projects seemed a reasonable assumption for the base case. Much of the easily utilized flare gas has already been utilized, and the marginal cost of producing new gas in developing countries is probably typically in this range.

A World Bank Energy Department study in 1983 found a marginal city-gate cost of new gas production in 10 developing countries to range from 61¢/MMBtu to \$1.79/MMBtu (1983 dollars). (Source: Marginal Cost of Natural Gas in Developing Countries: Concepts and Applications, Washington, D.C., World Bank, August 1983, p.i.).[12] The report also found that the marginal cost was consistently below the opportunity cost (source 5, page 14). By comparison, source 1 reported that "The opportunity cost of gas for ammonia manufacture, therefore, in many areas of the world with large resources of natural gas is likely to be between \$1.00-2.50 per MMBtu" (source 1, page 18).

Total estimated fuel and feedstock costs per metric ton for ammonia were calculated by multiplying the assumed natural gas price times the gas consumption per ton of ammonia produced. Gas consumption of 32 MMBtu/metric ton was assumed, consistent with source 2, page 8 and source 5, page 5.

Average consumption in existing U.S. plants was reported by the Fertilizer Institute as 35.95 MMBtu/short ton (39.65 MMBtu/metric ton) for the year ended June 30, 1984 (source 6, page 6). Source 2 argued that this figure was consistent with consumption of 35 MMBtu/metric ton for a new plant in 1980, declining to 32 MMBtu/metric ton for a new plant to be ordered today. These figures for urea plants were closely consistent with those of Chem Systems, Inc., which projected average consumption for new U.S. plants of 33.77 MMBtu/metric ton in 1985 and 32.08 MMBtu/metric ton in 1990 (Source: The Outlook for Natural Gas Use in Methanol and Ammonia Production in the U.S., Houston, TX, Chem Systems, Inc. for the American Gas Association, March 1983, p. 51.[13] The assumption that new U.S. and foreign plants will achieve the same gas consumption per ton may slightly understate the relative cost of ammonia from foreign plants.

c. Other Ammonia Production Costs

Other ammonia production costs included catalysts, chemicals and cooling water; labor; overhead; maintenance; insurance; etc.

Catalyst, chemical and cooling water costs were taken from source 2, page 8. The total of labor, overhead, maintenance, insurance and miscellaneous were estimated at 31% of capital investment (excluding working capital) in the U.S. and Canada and 28% of capital investment elsewhere. These assumptions were roughly consistent with a number of sources, including source 2, page 10. The Chem Systems study had estimated 35% for a new 1981 U.S. plant (source 13, page 49). These figures may understate the relative cost of foreign ammonia, because maintenance and insurance costs may be higher in foreign locations, and the lower cost of foreign labor may be offset by higher numbers employed and expensive expatriate labor.

d. Total Ammonia Production Costs

The estimated ammonia production costs derived for new plants in this analysis were compared to published sources for reasonableness.

The 1983 Chem Systems estimate of $253.63/metric ton for a 1981 plant at 15% rate of return (source 11, page 49) was adjusted to the $3.00/MMBtu gas price used in this analysis, and the costs were escalated from 1983 dollars to 1985 dollars using the GNP deflator (source 5, page 7). On this basis the Chem Systems estimate was $261.16/metric ton, as compared to $256/metric ton derived in this analysis.

It is noteworthy that both of these estimates result in an ammonia cost for new plants that is on average roughly twice the cost of ammonia from existing U.S. plants (source 6, page 6). On the other hand, to the extent that market prices are today somewhere between U.S. average production costs and the cost of production from newer plants, actual reported Southeastern U.S. ammonia prices in the $200/ton range lend credence to the $256/ton calculated herein (Source: "Fertilizers Had a Super Year," Chemical Week, July 18, 1984, p. 300).[14]

The cost calculated in this study for ammonia from new Canadian plants of $274+/metric ton was well above reported market prices in the $150/ton range (see, for example, source 14, page 31). This analysis, however, omitted the high cost of terminalling and rail shipping

Canadian ammonia to U.S. markets. These costs and the higher costs of building ammonia plants in Canada compared to the U.S. Gulf (due to such factors as freight and climate) are known to be a serious impediment for Canadian ammonia if the price of fuel and feedstock gas is comparable to that in the U.S. (see, for example, "A Profile of Western Canada," Nitrogen, No. 148, March-April 1984, p. 27;[15] and, source 1, p. 24). Furthermore, the value of the Canadian dollar is at record lows against the U.S. dollar (Source: M.L. Wernecke, "What Happened to the Canadian Dollar?," Wharton Economic News Perspectives, March 18, 1985, p. 2),[16] an export cost advantage which is unlikely to last indefinitely.

The current costs for ammonia exported from other world sources, as reported in such sources as Nitrogen magazine, were naturally lower than the projected costs from new plants. They were high enough, however, to indicate that the range of cost estimates calculated in this analysis was not unreasonable.

e. Marine Shipping Costs

The projected costs of shipping liquefied anhydrous ammonia in refrigerated marine tanker ships from foreign locations to the U.S. were taken from: Mats Anderson, Proship, Ltd., New York, NY, by private communication with the American Gas Association, March 18, 1985;[17] and, from Barry Shove, A.L. Burbank Marine Services Ltd, London, England, by private communication with the American Gas Association, March 25, 1985.[18]

The costs shown reflect a range of possible vessel sizes, and estimated breakeven costs for new vessels versus the current (and chronically) depressed shipping rates.

These estimates were checked for reasonableness against several other sources, including: "Vessels Reported as Carrying Ammonia, April-August 1984," Nitrogen, No. 151, September-October 1984;[19] and, Bill Willis, CMI, Inc., Vero Beach, FL, by private communication with the American Gas Association, March 18, 1985.[20]

The cost of rail shipment of Canadian ammonia was unknown by the authors, and was excluded, thus clearly understating the cost of Canadian ammonia.

f. Marine Terminalling Costs

The cost of landing the refrigerated,

anhydrousammonia liquid through marine terminals in the U.S. was taken from source 20. This cost estimate seemed reasonably consistent with previous estimates of the cost of terminalling refrigerated propane gas through U.S. terminals (Source: The Outlook for Propane in Non-Feedstock Markets in the U.S., Arlington, VA, American Gas Association, June 1983).[21]

2. Results of the Economic Analysis

a. Background

Three important factors have impacted the regional economics of ammonia production over the past five to ten years. First, the long-term supply outlook for natural gas in the United States has greatly improved, and the price has stabilized under NGPA decontrol at a much lower level than most analysts had expected. Second, experience and inflation have substantially increased the costs being estimated for building new ammonia plants, particularly in developing nation locations. A study (source 3, p. 30) by the United Nations Industrial Development Organization (UNIDO) found that of fourteen projects analyzed:

> With two exceptions, the projects were not completed on time and the delay varied from 26% to 300% of the period estimated by the owners; the delays were accompanied by cost overruns between 20% and 200% of owners'estimates. It is postulated in the study that there were three fundamental and underlying reasons for these overruns:
>
> > implementation scheduling may have been too strict for developing country conditions (although costs did relate to the planned construction periods, the construction periods themselves proved to have been underestimated);
> >
> > unexpectedly severe inflation in the world economy over the review period (resulting in high cost escalations on delay);
> >
> > unnecessary delays in placing equipment orders. (source 3, page 30)

The third factor, the soaring value of the U.S. dollar, tended to offset the first two factors, to the extent that foreign projects were based upon local currencies. That is, the fundamental improvement in the competitiveness of

U.S. ammonia projects was partially offset by the strength of the dollar (see Exhibit C-1). Measured against a market basket of seven currencies, the value of the dollar has increased over 65% between 1980 and 1985.

As shown in Exhibit C-1, major forecasters are projecting that the dollar will return to "normal" historical levels of the early-and-mid-1970s by the early 1990s. As this happens, the relative economic attractiveness of new U.S. ammonia plants will be increased.

In addition to these three factors, it is probably also true that much of the world's most economically attractive gas has now been utilized. Very low prices (e.g., 50¢/MMBtu) may still be imputed for gas in very remote locations with no infrastructure, but a gradual upward pressure on the marginal production and opportunity costs must be expected.

b. Economic Conclusions

The results of the economic analysis are shown in Exhibit C-2.

It is recognized that the estimated ammonia costs are very approximate and not adequate for planning any individual project. A broad range of estimated costs for most source countries resulted from consideration of varying degrees of existing infrastructure from site to site within each country. Nevertheless, certain conclusions can be drawn from the analysis.

Even with today's strong dollar the economic attractiveness of the U.S. as a site for new ammonia capacity has increased markedly. It seems extremely likely that when new world ammonia capacity becomes necessary, the U.S. will be an attractive site. The close to 2 million tons of idle U.S. ammonia capacity (source 1, page 26) will be the first candidate, and the economics of much of this idle capacity must be attractive, indeed! According to The Fertilizer Institute's survey, the average age of U.S. fertilizer plants as of June 30, 1984 was 12.3 years, and the average plant investment was $114/short ton ($125/metric ton) -- half of the estimated cost of new U.S. capacity. Beyond the idle capacity, however, new U.S. capacity should also prove quite competitive to serve the U.S. market and, possibly, even a limited export market.

The results of this analysis strongly imply that, of sites for new ammonia plants, only those in the Western Hemisphere (and possibly Nigeria) could expect to compete with U.S. sites. Sites in the Middle East and Austral-Asia

EXHIBIT C-1

EXCHANGE VALUE OF THE DOLLAR
(WEIGHTED AVERAGE EXCHANGE RATE INDEX IN 7 MAJOR TRADING PARTNERS)
(1972 = 100)

Actual		Forecast	
1972	100.00	1985	144.1
1973	91.6	1986	136.1
1974	95.6	1987	125.0
1975	93.9	1988	117.5
1976	101.7	1989	114.9
1977	101.2	1990	112.1
1978	89.8	1991	108.1
1979	87.2	1992	104.5
1980	86.9	1993	101.3
1981	99.2	1994	97.6
1982	115.7		
1983	127.0		
1984	139.9		

Source: Long-Term Forecast (Philadelphia, PA, Wharton Econometric Forecasting Associates, December 1984), p.52; and, Long-Term Historical Data (Philadelphia, PA, Wharton Econometric Forecasting Associates, September 1984), p.20.[23]

EXHIBIT C-2

ESTIMATED COST OF AMMONIA FROM NEW PLANTS

	USA	Mexico	Trinidad	Chile	Canada	U.S.S.R.	Nigeria	Middle East	S.E. Asia/ Indonesia	Australia
CAPITAL INVESTMENT (Million 1985 U.S. Dollars)										
Facilities	$170	$190-250	$190-250	$190-250	$190	$250	$190-250	$190-250	$190-250	$190-250
Working Capital	15	18-31	19-32	19-32	16	32	19-32	19-32	19-32	16-19
TOTAL Capital Investments	$185	$208-281	$209-282	$209-282	$206	$282	$209-282	$209-282	$209-282	$206-269
PRODUCTION COSTS (1985 U.S. Dollars Per Metric Ton)										
Capital Recovery	$103	$130-178	$132-178	$132-173	$115	$178	$132-178	$132-178	$132-178	$115-150
Natural Gas Fuel and Feedstock	96	32	32	32	64	32	32	32	32	96
Catalysts and Chemicals	4	4	4	4	4	4	4	4	4	4
Labor, Overhead, Maintenance, Insurance, and Misc.	53	53-70	53-70	53-70	59	70	53-70	53-70	53-70	53-70
TOTAL Production Cost	$256	$219-284	$221-284	$221-284	$242	$284	$221-284	$221-284	$221-284	$268-320
SHIPPING AND TERMINALLING (1985 U.S. Dollars Per Metric Ton)										
Shipping	—	$ 10-24	$ 10-30	$ 20-50	$ 30-35	$ 20-60	$ 20-50	$ 30-70	$ 30-80	$ 30-70
Terminalling	—	15	15	15	-	15	15	15	15	15
TOTAL Shipping and Terminalling	—	$ 25-39	$ 25-45	$ 35-65	$ 30-35	$ 35-75	$ 35-65	$ 45-85	$ 45-95	$ 45-85
TOTAL LANDED COST IN U.S.A. (1985 U.S. Dollars Per Metric Ton)	$256	$244-323	$246-349	$256-349	$272-277	$319-359	$256-349	$266-369	$266-379	$313-405

are unlikely to be able to compete for the U.S. market. Even in the Western Hemisphere, only sites with the most favorable circumstances (such as a well-developed infrastructure and low gas price) are likely to be competitive.

New Canadian projects face higher capital costs than U.S. projects, and gas costs that are very close to U.S. gas costs (see source 1, page 19). In addition, Canadian ammonia faces high rail delivery and terminalling costs. On the other hand, Canadian sites are relatively close to regional ammonia markets in the U.S., and the Canadians have demonstrated their ability and willingness to be competitive. In all probability competition between new U.S. and Canadian ammonia possibilities will be severe, but Canada does not have the advantage.

New Mexican and Trinidadian projects generally face higher capital investment costs and lower utilization rates than U.S. or Canada. Many of the usual factors which drive up construction costs in developing nationsl are at work in Mexico and Trinidad, e.g., high general inflation, remoteness from suppliers, etc. Ammonia from many potential Mexican and Trinidadian ammonia projects will not be competitive in U.S. markets. On the other hand, in those situations where there is an existing support infrastructure the Mexican and Trinidadian construction costs may be quite similar to those in Canada. Growing infrastructure and experience, low imported gas costs to ammonia plants, and proximity to the U.S. market mean that competition among Mexican, U.S. and possibly Trinidadian ammonia will be significant.

The U.S.S.R. remains an uncertainty, since the constraints of capitalist economics may not necessarily apply. It seems unlikely, however, that Soviet ammonia from new plants will be competitive in U.S. markets in the foreseeable future.

D. PROJECTED AMMONIA SUPPLY AND DEMAND

a. Supply and Demand Methodology

A projection of a world ammonia supply and demand was not a primary objective of this analysis. To provide a context for the economic analysis, however, ammonia supply and demand projections appearing in the current literature were surveyed .

b. Ammonia Supply and Demand Outlook

There appears to be a reasonable concensus among analysts that new additions to world ammonia capacity will be required sometime in the 1988-1992 timeframe. Under some circumstances (e.g., delays in Soviet plants coming on line) the need could be sooner, and a few analysts expect it to occur even later. Given at least a four year planning and construction period, serious planning for new plant construction seems likely to be needed within the next two or three years.

Perhaps the most extensive and credible of the publically available supply and demand analyses is that of the World Bank /UNIDO/FAO Industry Fertilizer Working Group (see source 1). This group builds up its supply figures on a plant-by-plant and country-by-country basis. Its demand figures "... are the result of concensus within the Group after taking into account a variety of methodology [SIC] including trend projections, market surveys, agricultural programs and for countries with large demand, econometric modelling" (source 1, page 6).

The Group's projections are summarized in Exhibit D-1. Their finding is that there will be a need for new capacity after 1987/88, even assuming that all currently idle capacity is brought back on line and assuming that all new capacity comes on line as scheduled. The Group also points out that developing nations will be increasingly in nitrogen deficit in the second half of the 1980s, and will depend increasingly upon imports from Eastern European countries to meet their needs.

In addition to the need for new plants to meet growing demand, the Group points out that the surge in new ammonia plant capacity which occurred in the 1965-1979 period means that new capacity is needed to meet retirements as those plants age. (See Exhibit D-2). The Group concludes that as many as eighty new plants may be needed worldwide in the 1988-1994 time period.

Another Authoritative source of ammonia supply and demand projections is the British Sulphur Corporation, Ltd. In their projection, shown in in Exhibit D-3, a need for new world ammonia capacity builds even more quickly than in the World Bank projection (source: "Time for New Investment, "Nitrogen, No. 150, July-August 1984, p. 5).[22]

EXHIBIT D-1

WORLD BANK
NITROGEN FERTILIZER SUPPLY/DEMAND BALANCE BY REGION
(Million Metric Tons of N)

REGION	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89	1992/93
Developed Market Economies	- 1.50	- 1.28	- 0.60	- 0.73	- 1.48	- 2.07	- 4.76
Developing Market Economies	- 1.98	- 1.77	- 1.33	- 1.16	- 1.31	- 1.14	- 5.64
Centrally Planned Economies	3.46	3.66	3.52	3.25	2.91	2.30	- 1.90
TOTAL WORLD	- 0.02	0.61	1.59	1.36	0.12	-0.91	-12.30

Source 1, Page 8.

Note: A minus indicates a current or projected ntirogen deficit. Nitrogen is the principal element in ammonia from a fertilizer perspective.

EXHIBIT D-2

WORLD BANK
NEW AMMONIA PLANTS CONSTRUCTED

5 YEAR SPANN	1960/64	1965/69	1970/74	1975/79	1980/84	1985/89
Developed Market Economies	19	63	41	41	28	7
Developing Market Economies	9	20	25	34	29	25
Centrally Planned Economies	21	32	40	46	30	3
TOTAL WORLD	49	115	106	121	87	35

Source 1, Page 12.

EXHIBIT D-3

BRITISH SULPHUR CORPORATION
FORECAST OF WORLD AMMONIA MARKET BALANCE
(million metric tons N)

	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91
Total Production/ of which:	82.2	85.4	88.3	90.7	93.1	95.7	98.1	100.7
A	81.2	84.0	86.3	88.0	89.4	89.5	89.6	89.6
B	1.0	1.4	2.0	2.7	3.0	3.0	3.0	3.0
C	—	—	—	—	0.7	3.2	5.5	8.1

A Production from existing capacity at current utilization rates plus expected output from projects currently under construction or contracted out.

B Increased output through the reopening of idle plants and increased utilization of plants which have been operating of reduced rates. This would be justified only by higher market prices.

C Output required from new plants not yet contracted out. This would require the possibility of market prices reflecting the full cost of production out of a new plant.

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From Executive Summary

24. Frank P. Maxey, U.S. Department of Commerce, Washington, D.C. by private communication with the American Gas Association, April 12, 1985.

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STATEMENT OF CHARLES P. EDDY, ON BEHALF OF THE AMERICAN INDEPENDENT REFINERS ASSOCIATION

Mr. Chairman and members of the committee, my name is Charles Eddy, and I am the Director of Government and Regulatory Affairs for Tosco Corporation of Santa Monica, California. I am testifying today on behalf of the American Independent Refiners Association (AIRA). AIRA is the only trade organization which speaks exclusively for independent refiners. We appreciate this opportunity to present our views to the Committee.

I. SUMMARY OF COMMENTS AND RECOMMENDATIONS

Generally, AIRA members recognize the need for Superfund to pay for the cleanup of abandoned hazardous waste sites and certain petroleum and chemical spills, and we support its reauthorization. However, we are seriously concerned about the potential impact of any significant increase in the current Superfund petroleum feedstock tax.

The Hazardous Substance Response Revenue Act of 1980 (94 Stat. 2797), more commonly known as the Superfund Tax Act ("the Act"), imposed both a tax on crude oil ("petroleum tax," I.R.C. § 4611) and a tax on certain organic and inorganic chemicals, including petrochemical feedstocks ("chemical tax," I.R.C. § 4661). Currently, every barrel of crude oil received at a U.S. refinery is subject to a .79 cents per barrel petroleum tax.

Various legislative proposals which are pending now or have been considered by either the Senate or the House during the last year would increase the petroleum tax many times. AIRA members believe that any significant increase in the petroleum feedstock tax would impose a disproportionate and inequitable burden upon independent refiners as compared both to the integrated international oil companies and to American industry generally. Since the independent refining sector already is facing serious financial difficulties, for some AIRA members any significant increase in the petroleum tax burden could be a critical blow.

AIRA recommends (1) that the petroleum tax be maintained at its current level, (2) that the method by which the current petroleum tax is imposed be amended in order to make it more likely that the tax can be passed downstream and (3) that Congress enact an additional, broadbased tax, such as an excise tax on all manufacturers and producers of tangible personal property, the proceeds of which would be used for an expanded Superfund.

II. INDEPENDENT REFINERS HAVE SERIOUS FINANCIAL PROBLEMS

The independent sector of the petroleum refining industry today provides over one-fourth of the nation's petroleum products. Historically, it has provided important innovations and has served some product markets which are not served by the major integrated oil companies. Independent refiners, which are the primary suppliers of independent marketers and retailers, facilitate competition at the pump by providing consumers with a competitive alternative to the integrated major oil companies.

Today, however, the contributions of the independent refining sector are seriously threatened. In recent years independent refiners, which, by definition, do not have substantial reserves of crude oil, have been facing severe financial difficulties. Many independent refiners have incurred substantial debt in order to upgrade their facilities to meet changing consumer demands and to comply with evolving environmental regulations. Many also are making additional investments to comply with EPA's accelerated lead phasedown. No matter how sophisticated the facilities of independent refiners have become, however, most simply are not earning profits from refining operations.

Independent refiners, like other U.S. refiners, are faced with rapidly increasing imports of gasoline and gasoline blendstocks, negative profit margins in refining operations, increases in export refining capacity offshore (particularly in OPEC countries) and static gasoline demand in the United States. These factors have caused the shutdown of efficient, sophisticated refineries in this nation. Between January 1981 and January 1984, the U.S. refining industry permanently shut down 107 refineries, representing about two million barrels per day of capacity, and idled one million more barrels. Of these refineries, 88 were independent. Since January 1, 1984, an additional one million barrels per day of U.S. refining capacity has been closed down. This included 27 independents, representing nearly 900,000 barrels. We are facing the potential loss of another one million barrels per day in the near-term.

In six of the last eight quarters beginning in 1983, a barrel of refined products has sold in the U.S. market for less than the price of the barrel of crude oil used to make it. This has resulted in negative profit margins for virtually all U.S. refiners, despite the fact that U.S. domestic crude oil posted and spot prices are now among the lowest in the Free World. Over this period, the selling prices of refined product imports into the U.S. market also have failed to recover the posted and spot prices of crude oil in Free World markets. Netback analysis reveals that almost all of the Free World's refiners would have been experiencing negative margins in their operations on this basis. Yet foreign refiners have greatly increased their exports to the U.S. market since 1981, while our refineries have been closing down. Most of this increase was in 1984 and the last two quarters of 1983.

Unlike the major oil companies, independent refiners cannot finance operating losses, or investments to assure compliance with environmental regulations, through reserves of crude oil. Thus, independent refiners which are still in business must recognize that each new proposal or development which threatens to further undercut miniscule or negative margins is a life and death issue. For many AIRA members, any significant increase in the Superfund petroleum feedstock tax would indeed be such an issue.

III. A PETROLEUM TAX INCREASE WOULD BE PARTICULARLY BURDENSOME BECAUSE IT WOULD BE DIFFICULT TO PASS THROUGH

The original Superfund Tax Act was designed to impose the tax burden on petroleum, petrochemical feedstocks and inorganics approximately in proportion to the ratio of hazardous wastes generated from each. The drafters, seeking an equitable fee system with minimal and widely diffused economic impact, sought to tax the relatively few basic building blocks which ultimately result in the generation of hazardous products and wastes. The intent was not to single out any one industry's profits, but rather to create a tax which could be "evenly passed along to all industrial sectors which produce and consume hazardous substances and generate hazardous wastes." S. Rept. No. 96-848 to accompany S. 1480, at 19-20, 96th Cong. 2d Sess. (1980).

In accordance with the Act's allocation system, the petroleum tax has generated 15 percent of the total fund from the refining industry, reflecting the level of waste originally projected to be generated by that industry. Time has shown that this represents far more than the industry's fair share, since EPA data suggest that refineries are generating less than 15 percent of the nation's hazardous waste.

The impact of the disproportionate tax burden, and the potential impact of a petroleum tax increase, would be less troublesome if the tax were operating as the drafters had expected. Excise taxes, generally, are expected to be passed on downstream to a manufacturer's customers, and Congress specifically intended that the original Superfund tax would be passed on evenly, throughout the economy, so as not to weigh too heavily upon any industry. However, actual experience indicates that the tax burden is not being passed on evenly, and that any increase in the petroleum tax would weigh particularly heavily upon independent refiners because they probably could not pass the increase on downstream.

The current petroleum marketplace conditions—including strong downward price pressures to create market share and inexpensive imported gasoline establishing the marginal price—would make it difficult for independent refiners to pass the additional Superfund crude oil tax through to consumers. And because of their extremely tight margins, for some independent refiners the need to absorb even a fraction of a cent of additional tax could be a fatal blow.

IV. A BROADBASED TAX WOULD BE A FAIRER APPROACH

It has become clear that the total costs of cleaning up the nation's abandoned hazardous waste sites will be astronomical—many times the currently authorized Superfund levels. These problem sites are attributable not primarily to current practices of two major industries, but to the past practices of virtually every segment of American business, from the corner dry cleaner to the largest industrial plants. AIRA's members do not object to payment of the petroleum tax at its current level. However, a tax distributed across a broad cross-section of American industry should be considered seriously by the Congress as an alternative to any increase in the current feedstock taxes.

Among the broadbased tax approaches which AIRA's members believe are worthy of careful consideration is a manufacturers tax. Such a tax, which would be imposed at a very low level on sales of all manufactured goods and raw materials, would reflect the fact that hazardous wastes, and the economic benefits related to past disposal practices, are associated with the activities of the entire manufacturing sector. The tax could be levied at such a low rate that it would impose a disproportionate burden on no particular industries, and it could be structured in such a way as to not place domestic goods at a disadvantage compared to foreign goods.

The manufacturers tax is only one of the options for broadening the tax base. If additional time is needed for evaluation of these various proposals, particularly in light of the need to also increase general revenues, AIRA's members urge that the current tax scheme simply be reauthorized for some brief period There is a danger that the apparent simplicity of a substantial feedstock tax increase could make it appear unduly attractive. It is critical that adequate time be spent to assure that an expanded Superfund does not result in a crippling tax blow to any single industrial sector.

V. AN ALTERED COLLECTION METHOD COULD FACILITATE FEEDSTOCK TAX PASSTHROUGH

Whatever the tax level, the system for collecting any petroleum feedstock tax should be modified to facilitate maximum passthrough to ultimate downstream purchasers. Industry history suggests that petroleum taxes are more likely to be passed through to downstream customers if the taxes are levied upon refined petroleum products, with liability resting with first purchasers, instead of being imposed upon refinery feedstocks, as is the case with the current petroleum tax. One way to modify current feedstock tax to encourage passthrough would be to collect the tax by increasing and broadening the existing excise tax on motor fuels.

VI. ANY PROPOSAL TO IMPOSE A BTX TAX SHOULD BE REJECTED

In the refining process, the lighter and more active benzene, toluene and xylene often are separated from the refined streams as reformates and reblended into gasoline during the final stages of production in order to achieve desired octane levels. In 1983, the Internal Revenue Service proposed regulations which would have treated these partially processed hydrocarbon streams as "taxable chemicals" even though they ultimately leave the refinery gate as gasoline components and not as petrochemical feedstocks (48 Fed. Reg. 48839, October 21, 1983).

However, those regulations were not put into effect, and a provision in the Deficit Reduction Act of 1984 amended the Act to clarify that such an imposition of the chemical tax upon interim refinery streams would be inconsistent with the intent of Congress. In enacting that clarification, Congress refused to alter significantly the tax balance and declined to permit the Superfund feedstock tax burden to be shifted away from the chemical industry to the petroleum industry. S. Rept. No. 98-169, Vol. I, at 760, 761, 98 Cong. 2d Sess. (April 2, 1984).

Under various legislative proposals which were introduced last year, however, Congress would have reversed itself. Various bills would have applied the chemical tax to streams of benzene, toluene and xylene which are blended into gasoline ("BTX tax"). The impact of a BTX tax would be to greatly magnify the disproportionate tax burden upon refiners, and particularly upon independent and other domestic refiners. Although it appears that Congress has rejected the BTX tax, AIRA members are sufficiently concerned about the impact of such a tax that we wish to briefly address the problems which would be raised if the approach were once again considered.

If a BTX tax were enacted, the burden of funding would be drastically distorted. The refining industry could be called upon to contribute several times that 15 percent, which, in itself, represents an expansive measure of the industry's fair and proper share of the cost of cleaning up hazardous wastes.

The BTX tax not only would disproportionately burden the refining industry, but also could result in varying economic impacts and substantial competitive problems among various sectors within the industry. One critical problem is that, at a time when domestic refiners are struggling to meet the growing competition from foreign, often government-owned refiners, the BTX tax would act as a subsidy for imports of petroleum products. This is because, although importers would continue to pay the petroleum tax, the finished product they import would not be subject to the chemical tax imposed on interim streams. The BTX tax would result in a substantial incremental tax on domestic gasoline only. This tax differential, during a period when margins are extremely tight or negative, could further undercut the competitive position of many domestic companies.

Another inequitable aspect of a BTX tax would be that its level would vary significantly from company to company, according to a variety of factors with little relationship to the hazardous waste ultimately to be generated. Various refineries produce and blend varying combinations of interim streams, depending upon their feedstocks, their desired product slates and the nature of their facilities. Finally, because operations which produce and use BTX vary from day to day and facility to facility, the BTX tax also would not achieve the goal of ease of administration. It would not be simple to measure and record varying BTX levels, nor to compute, report and audit the BTX tax. A probable result would be uneven application of the tax and substantial controversy.

VII. THE SUPERFUND TAX ISSUE IS CRITICAL TO INDEPENDENT REFINERS

Many in the independent refining sector regard the equitable resolution of the Superfund tax issue as a matter important to their very survival. A reauthorization of Superfund without full consideration of the equities involved and a reassessment of the tax basis would be a mistake which some U.S. independent refiners may not be able to survive.

Statement of the American Wood Preserving Institute

INTRODUCTION

The American Wood Preserving Institute (AWPI) is pleased to have this opportunity to present its views on proposals to extend and modify the expiring provisions of Title II—Hazardous Substance Response Revenue Act of 1980 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) of 1980. Specifically, our testimony addresses the potential negative impact on wood preserving companies of the waste-end tax provisions of several of the Superfund reauthorization bills introduced to date. Our concern is over the taxation of the very large amounts of waste that can result from clean-up actions under the Resource Conservation and Recovery Act (RCRA) and CERCLA. Our concern also includes the imposition of a cut-off date which would end any exclusion of these large amounts of waste from taxation. If a waste-end tax is passed by the Congress, it shouldcontain a provision that excludes from taxation waste resulting from RCRA and CERCLA related action for the entire five-year authorization period.

The wood preserving industry is small in terms of its annual dollar sales, approximately $1.36 billion, and employees, approximately 11,000 (1982 Census of Manufacturers). Although there are exceptions, the companies in the industry are primarily small businesses. It is an industry located in the primary timber producing areas of our country, the southeast and the northwest. Yet, despite its small size, the products of the wood treating industry convey enormous benefits to our society. Our nation's railroads run on treated wood ties, electric power and communications lines are supported by treated wood poles, and ships tie up to docks made of treated wood piling and lumber. Clearly, these products are important in our nation's commerce. Moreover, the public derives enjoyment from the use of treated wood in items such as backyard decks, marinas, and landscaping.

This Committee has before it several proposals for funding an expanded Superfund. Many, if not all of these proposals have within them provisions imposing a waste-end tax on (1) the disposal or receipt of hazardous wastes in landfills, waste piles and surface impoundments, and (2) the long-term storage of hazardous wastes. In some cases, a credit for treatment is available to offset part of the disposal tax. These proposals would tax the disposal, treatment, or long-term storage of hazardous wastes resulting from the cleanup of releases under RCRA and under CERCLA after certain dates. Specifically, the Administration's current proposal would tax wastes resulting from releases occurring after October 1, 1985, and cleaned up under Superfund. Similarly, waste resulting from a RCRA action taken after the date of enactment of the new law would be taxed. As will be explained, taxation of the disposal, treatment, or long-term storage of waste resulting from a RCRA or CERCLA cleanup could create a very large tax liability in any industry. Small business would be particularly hard pressed to fund such a liability.

NEGATIVE IMPACT ON THE WOOD PRESERVING COMPANIES

RCRA, CERCLA, and waste-end taxes

Clean-up actions under RCRA and CERCLA will generate enormous amounts of soil, other debris and water that is legally hazardous waste and that would be taxed under a waste-end tax. What will trigger these clean-up activities? First, under the Solid and Hazardous Waste Amendments of 1984 (Amendments) to the Resource Conservation and Recovery Act (RCRA), all hazardous waste treatment, storage, and disposal facilities must apply for their final permits (a permit authorizes a facility to manage hazardous waste) by November 8 of this year. The Amendments also require that a permit issued after November 8, 1985, must include corrective action, i.e., clean-up plans, for all releases (any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment) of hazardous waste or constituents from any solid waste management unit at a facility that has been issued a permit. Therefore, companies who apply for their final permits by November 8 of this year must thereafter begin to take corrective action if there are releases coming from units at their facilities. Taxation of the wastes resulting from a corrective action (a cleanup) would follow upon receipt of the wastes at a RCRA treatment, storage, or disposal unit located either on-site or off-site.

Can a company avoid cleaning up a release (and the resultant tax) by shutting down the unit, leaving the waste in-place on-site, and not applying for a final permit? The answer is no. EPA has interpreted the Amendments to require as part of a post-closure permit (a post-closure permit specifies the terms and conditions under which the unit and the hazardous waste in the unit must be managed for 30 years after closure) corrective action to address any release from any solid waste management unit at the facility. The waste resulting from such corrective action would be subject to the waste-end tax.

What if a company decides not to apply for a final permit, but instead chooses to close down the hazardous waste management unit and to send all the waste resulting from the cleanup off-site for disposal? Again, this waste would be taxed if it is received at an off-site treatment, storage, or disposal facility.

The above discussion focuses on the tax consequences flowing from compliance with the RCRA permit application and corrective action provisions of the Amendments. However, still other questions arise. What tax liability would be assumed if EPA has already required the facility to apply for a final RCRA permit, or if EPA decides to require the submission of a final permit for a unit sometime after November 8, 1985? It should be noted that the former situation already has occurred for many land disposal units. As to the latter situation, it could result if EPA decides to classify a particular waste managed at a unit as a hazardous waste. In turn the unit in which the waste is managed would become a hazardous waste management unit for which a final permit must be obtained. Here, the owner or operator has three options if there is a release coming from any hazardous waste management unit at a facility. The first option is to apply for a final permit and clean up the release under the permit. The second is to close down the unit and leave the waste in-place on-site. However, if there is any groundwater contamination, EPA would probably force a cleanup of the release under a corrective action order. The last option is to close down the unit, clean up the release, and dispose of the resulting waste at an off-site facility. For all of these scenarios, the waste would be taxed under the proposed waste-end tax provisions when it is received at a treatment, storage, or disposal unit.

What if a facility receives its final permit without having to take corrective action, but sometime in the future detects a release of hazardous constituents from a unit to the environment? Cleanup of all of the resulting waste would have to occur. This could be an enormous amount of waste because EPA's "mixture rule" states that when a listed hazardous waste mixes with another waste, the entire amount of the mixture becomes a hazardous waste. Again, in this situation, the waste resulting from the cleanup, e.g., water, soil and other debris, would be taxed under the waste-end tax provisions in several of the existing bills.

The above discussion covers the situation where large amounts of old waste and contaminated debris are generated at a facility due to RCRA permitting and cleanup requirements. This same kind of old waste and debris also can be generated at on-going production facilities as a result of Superfund removal or remedial actions, or in response to a Superfund abatement order. It should be noted that Superfund is a law that can be used to force a facility to clean up any release of hazardous substance into the environment. The release does not necessarily have to come from (1) an abandoned facility, (2) a facility on the National Priorities List, or (3) a non-RCRA facility. Owners and operators of active industrial facilities which generate, treat, store or dispose of hazardous waste could be forced to clean up a release under Superfund. (This includes small quantity generators of hazardous waste.) Unless a tax exclusion is granted, the waste resulting from a one-time Superfund cleanup would be taxed under the waste-end tax provisions when it is received at a qualified hazardous waste management unit, regardless of whether that unit is on-site or off-site.

The bills introduced to date would exclude from waste-end taxation all wastes resulting from a Superfund removal and remedial action selected by the Administrator where the release causing the removal or remedial action occurred before October 1, 1985. If a company finds a release at a facility sometime in the future, the waste resulting from the release would be considered as having been generated after the cut-off deadline. This waste would be taxed. Likewise, if EPA has not yet acted at a facility to identify a release and prescribe acceptable removal or remedial action, the waste could be deemed to have been generated after the cut-off deadline and thus subject to taxation. The tax liability would occur despite the fact that the large amount of waste resulting from the release was actually caused by materials generated sometime prior to the cut-off date.

Thus, a problem of great consequence is created if a cut-off date is set in the legislation beyond which any exclusion for old Superfund waste or old RCRA waste is lost. The magnitude of the tax liability resulting from a cleanup of old waste could be so enormous that it would threaten the continued viability of a wood treating operation. Therefore, a primary policy objective of any waste-end tax should be to exclude from taxation waste resulting from cleanups of old wastes. Such an exclusion would help ensure the continued viability of manufacturing entities that are capable and willing to pay for and undertake cleanups with their own resources.

Potential tax liability

Estimates by companies of the amount of waste generated by cleanups at wood treating facilities range from 5,000 to 10,000 tons at the low end to 60,000 tons and above per facility. Cleanups of this size are either underway or in the planning stage. If the first-year tax rate of $9.80 per ton from H.R. 1775, the "Superfund Revenue Reduction Act of 1985," introduced by Mr. Moore, is used, the waste from a 10,000 ton cleanup would generate a tax liability of $90,800. If the fifth-year rate of $16.32 is applied, the tax liability is $160,320. A 60,000 ton cleanup would impose a liability of almost $1 million at the same rate. Other proposals before the Committee have waste-end tax rates that are considerably higher. Thus, the tax liability for a facility could be very large. To gain a perspective of the size of such a liability, it should be compared to estimates of the sales and pretax profits of wood treating establishments in the industry.

The 1982 Census of Manufacturers published in March of 1985, revealed that 340 of 524 or 65% of wood preserving establishments had less than 20 employees each. These 340 establishments accounted for only $291.2 million or 21% of the $1.36 billion total value of shipments for the industry. While there has been some contraction in the industry, the same general situation exists today. Therefore, there are a large number of small producers that generate around $1 million in sales and pretax income of about $60,000, assuming an average pretax income rate of 6% on sales. Establishments of this size would be severely impacted by the tax liability resulting from even a relatively small cleanup.

Again, according to the 1982 Census, there was a group of 131 establishments which averaged about $4 million in shipments per year. Current establishments of this size would generate about $240,000 per year in pretax income based on the 6% pretax return on sales. Even these organizations would be hard pressed to swallow a one-time tax liability of the size resulting from tens of thousands of tons of waste, especially when it comes on top of clean-up costs that usually exceed a $100 per ton.

FAIRNESS OF TAX ON RCRA AND CERCLA WASTE

Is taxation of the wastes resulting from one-time cleanups under RCRA or Superfund of a wood treating or other industrial facility fair? Should Congress permit the adverse impact on companies in the wood treating industry that will flow from a waste-end tax on RCRA or CERCLA cleanups? Does a tax on wastes resulting from RCRA or CERCLA cleanups serve the purposes underlying Superfund taxation? The remainder of this testimony presents the answer to all of these questions as no.

Taxation of the wood treating wastes resulting from one-time cleanups under RCRA or Superfund is unfair. Over the years, owners and operators of these facilities have tried to operate in good faith in accordance with all known laws, environmental and other. When RCRA was enacted into law, and EPA promulgated implementing regulations, most wood treaters acted promptly to comply with these laws. Some wastes and waste handling activities were even exempted at the outset of these regulations. Now, under various waste-end taxing schemes proposed by Congress, should there be a cleanup activity resulting from past practices, which were acceptable at the time, all wastes resulting from such a cleanup would be taxed. This tax is basically a tax on past activities. It is a retroactive tax. In light of the heavy and, perhaps, insurmountable financial burden that it will place on many marginal but environmentally-responsible businesses, a tax on past activity could be viewed as punitive.

In enacting a waste-end tax, Congress should not permit the potential adverse impact on wood treating companies that could result from RCRA and CERCLA cleanups. This type of tax will draw money away from viable entities which may have very limited resources with which to take corrective action. To impose a tax on the wastes resulting from a cleanup imposes a double burden on a facility; first, the cost of cleanup; second, the cost of the tax. This double burden is one that many wood treaters facing a RCRA or CERCLA cleanup cannot bear. The cost of cleanup alone at a facility could be enough to make the company insolvent. Therefore, before imposing a tax on disposal, treatment, or long-term storage of wastes resulting from RCRA or CERCLA cleanups, Congress should carefully consider whether it wants viable, environmentally-responsible entities undertaking long-term cleanups at wood preserving company sites using their own money, or whether it wants to increase the probability of the task being conducted by EPA using Superfund money.

A tax on wastes resulting from RCRA or CERCLA cleanups does not serve many of the purposes for Superfund taxation. Granted, such a tax does provide a source of revenue, but it is neither a stable nor an entirely predictable source. It would be a one-time tax at most industrial facilities. Moreover, the tax holds the potential for narrowing the base from which revenue is received if the tax liability forces small companies out of business. Further, the tax does not discourage reduction in the quantities of hazardous waste currently generated because the waste resulting from cleanups is old waste. Particularly troublesome is the fact that taxation of RCRA and CERCLA facility cleanups contradicts one of the primary rationales underlying creation of the Superfund, the cleanup of abandoned hazardous waste sites. Since the owners or operators of the taxed facilities have been identified and would be responsible for conducting cleanup activities, Superfund money would not be needed to underwrite these RCRA activities. It is unfair and illogical to tax a RCRA facility owner or operator already paying for cleanup of that site when the fund supported by the tax will not be used for the cleanup.

RECOMMENDATION

For the foregoing reasons, the American Wood Preservers Institute urges this Committee to prevent the potentially devastating impact on wood treating companies of a waste-end tax on large quantities of old waste. We request that any waste-end tax enacted contain an exclusion from taxation for wastes resulting from cleanups under RCRA and CERCLA at any time during the five-year reauthorization period.

The AWPI would be very pleased to assist the Committee as it considers new taxation mechanisms to fund CERCLA.

Statement of Donald A. Randall, Washington Representative, Automotive Service Councils, Inc.

Automotive Service Councils, Inc. (ASC), is the largest national trade association representing independent automobile repair shops. On behalf of our membership which numbers over 6,000 nationwide, ASC appreciates the opportunity to provide this distinguished committee with a written statement for the record concerning the financing of the Superfund program.

ASC believes that an examination of proposals to finance the Superfund program cannot be separated from a discussion of the size of Superfund. The size, and to a large extent the scope of Superfund, is inextricably linked to the means whereby this program will be financed. Accordingly, ASC urges this committee to examine strategies for funding the Superfund program in concurrence with the proposed size of this waste clean-up program.

Concerning the size of the five year Superfund program, Mr. Lee Thomas, Administrator of the Environmental Protection Agency (EPA), has said that his agency can effectively adminster a $5–5.5 billion five year Superfund program. ASC believes that it is marginally inefficient to expand the Superfund program beyond the level which EPA can effectively administer. Larger Superfund spending levels such as those advocated in S. 51 and H.R. 2022 would in effect equate to unproductively throwing money at the problem of abondoned hazardous waste sites. Large quantity does not necessarily translate into good quality. ASC feels that it is a misconception to believe that a Superfund program financed at a level beyond that which the EPA can effectively administer will in fact promote better clean-up of abandoned hazardous waste dumps. Marginal efficiency must be the primary consideration in framing the size of the Superfund program.

The scope of the Superfund program must be limited to the intent of its original framers. Economic efficiency and the public interest dictates that the Superfund program cannot be used as an all encompassing vehicle of hazardous waste disposal policy. ASC believes that the Superfund should continue to be a program which is only targeted at the clean-up of dangerous and inactive hazardous waste sites. The scope of Superfund should not be broadened to include environmental pollution which can be addressed using existing authorities at the EPA or other federal agencies. The limited Superfund program should be sensitive to local conditions in framing clean-up standards.

In an examination of tax strategies to finance Superfund, ASC urges the Ways and Means Committee to consider the financial effect of the new Resource Conservation and Recovery Act (RCRA) enacted last year. According to EPA estimates, the number of federally regulated hazardous waste generators will increase by 100 to 130 thousand due to the stringent redefinition of the small generator exemption. In the wake of this increased financial burden for hazardous waste management, ASC questions the wisdom of imposing a "waste-end tax." Increasing the cost of proper disposal of hazardous waste, in light of the increased compliance costs associated with the new RCRA law, would act counter to the intent of Superfund. Any additional compliance costs would encourage the improper disposal of hazardous waste.

ASC questions the merits of a federal waste-end tax to finance Superfund. Our concern regarding a waste-end tax is not the parochial financial self-interest of our members. As an association, ASC believes that a harmony of interests must exist between environmental concerns and business considerations and our members are willing to pay their fair share to maintain a healthy and safe environment. Based on a General Accounting Office (GAO) study,[1] we do not feel that a federal waste-end tax is a viable means of financing Superfund. This 1984 GAO study found that in order to implement federal waste-end tax program modeled after existing state programs, more data are needed on the types and quantities of waste generated and the treatment, storage, and disposal methods used.

We also question the desirability of a federal waste-end tax. As exhibited by a study of California's waste-end tax program,[2] increasing the cost of proper disposal of hazardous waste increases the likelihood that such wastes will be disposed of improperly. In one year, California experienced a 28 percent decline in reported waste, including a 66 percent decline in extremely hazardous wastes, after enacting a waste-end tax.[3] Further, we urge this committee to consider the high effective tax rate for proper hazardous waste disposal when a federal waste-end tax acts in combination with state waste-end taxes. A federal waste-end tax will in fact create an incentive for socalled "midnight dumping." The real world effect of a federal waste-end tax is incongruous to the intent of Superfund.

Irrespective of the particular tax strategy chosen to finance Superfund, ASC believes that general revenue should finance a portion of the program. The cost of financing Superfund must bear a relationship with the incidence of social benefit arising from the clean-up of abandoned waste dumps. Due to the fact that the Superfund program creates a general benefit to society, a component of its financing should be general revenues.

ASC supports an efficient Superfund program which is limited in size and scope by marginal efficiency considerations. General revenues should finance a portion of Superfund due to general incidence of social benefits which arise from this program. When deciding what tax mechanism should be used to augment general revenues, ASC urges the Ways and Means Committee to dismiss a proposed federal waste-end tax which would be a cost-ineffective means of financing Superfund.

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[1] General Accounting Office, *State Experiences With Taxes on Generators or Disposers of Hazardous Waste*, May 4, 1984.

[2] ICF, Inc., "Briefing on CERCLA Tax Alternatives."

[3] Ibid., part II, p. 20.

STATEMENT OF COMPRESSED GAS ASSOCIATION

The Compressed Gas Association—which has been in existence since 1913—is the chief industry association in the United States and Canada representing producers of compressed gases and cryogenic liquids, as well as equipment used in storage, transport, and delivery of such products. The CGA has, through a system of voluntary standards, made the compressed gas industry one of the safest industries in the United States. We might also note here, that in the seventy-two years of CGA's existence, this is the first time we have come to Congress to testify on a pending piece of legislation.

We wish to urge that the Superfund tax not be unjustly or unfairly imposed on acetylene when it is used in the welding and cutting industry.

Let us point out that all acetylene is chemically alike. But acetylene is produced for two markets. One market is the chemical industrial market. That acetylene is put into pipelines and used for chemical processes.

The current Superfund tax focuses on chemicals that serve as "building blocks" of hazardous substances, whose disposal can cause environmental problems. Taxing these building blocks is thought to be an efficient way of assuring that users of these hazardous substances share the cost of clean-up. When acetylene is put into pipelines and used for chemical processes, it serves as a "building block" and is subject to taxation. We are not at this time questioning the rationale of the current feedstock tax or its application to pipeline acetylene.

The acetylene we are concerned with is that which is compressed and filled into cylinders and then used in the welding and cutting industry. That acetylene is entirely consumed when used. Specifically, 100% of the by-products of welding and cutting are carbon dioxide and water which are harmless and completely free of any toxic properties addressed by the superfund law. We would like to note that "cylinder acetylene" is never used in chemical processes.

Under current law, propane, the fuel with which acetylene primarily competes for cutting and welding uses, is not taxed at all. Butane and methane, other gases that are widely used for heating purposes, are exempt from the feedstock tax when they are used as fuel. They are taxed only when used as feedstocks. Although cylinder acetylene is not specifically exempt from taxation, it is not for the most part taxed because it is generated from calcium carbide, primarily a coal derivative, and substances derived from coal are exempt from tax under section 4662(b) (4) of title 16. The effect of the coal exclusion has been to provide cylinder acetylene with almost the same tax treatment as competing fuels, such as propane.

Unless steps are taken to continue this equal treatment, elimination of the coal exclusion, coupled with any major increase in the per ton tax on acetylene would have a drastic effect on the competitive position of the cylinder acetylene industry. Is not difficult to adjust most modern welding torches to accommodate other gases, such as propane. If cylinder acetylene is singled out for heavy taxation, our customers will simply switch to untaxed fuels. The cylinder acetylene industry is primarily composed of independent small businesses, widely dispersed throughout the United States. The industry is not healthy today. Its production has declined on the average of five percent each year since 1980. Discriminatory taxation will surely hasten this decline, destroying many independent small businesses.

As we pointed out earlier, this discriminatory treatment of cylinder acetylene cannot be justified on environmental grounds. Our product is not used to make other chemicals and it does not produce hazardous wastes, only carbon dioxide and water.

In order to avoid placing the cylinder acetylene industry at an unfair competitive disadvantage, we suggest that any modification of the current superfund feedstock tax contain the following exclusion from the definition of a taxable chemical:

"Under regulations prescribed by the Secretary, acetylene shall not be treated as a taxable chemical if it is used for heating, such as in welding and cutting."

Again, I would like to sum up our position.

1. Acetylene is a fuel when used for cutting and welding. In that use, it produces no toxic byproducts.

2. The majority of the producers are independent small businesses who depend on this one product. They cannot switch to anything else. The industry is having a hard enough time competing on an even basis—it cannot carry a tax its competitors are excluded from.

3. We are asking only for fairness. "cylinder acetylene" should not be covered by a Superfund tax.

The Compressed Gas Association and its staff will be glad to answer any questions that might arise and supply any additional information that might be needed.

STATEMENT OF ROBERT J. WARDELL, PRESIDENT, COPPER & BRASS FABRICATORS COUNCIL, INC.

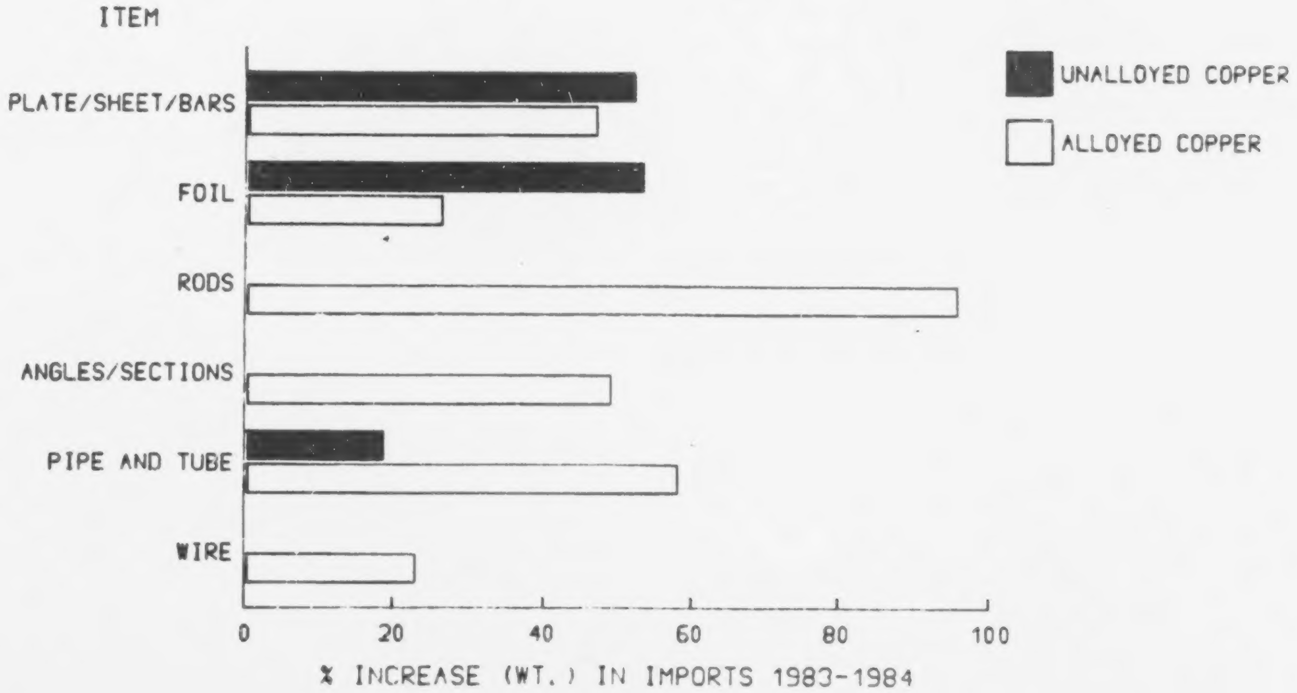
The Copper and Brass Fabricators Council appreciates this opportunity to comment on proposals before the Committee to expand the funding mechanism of the Hazardous Substance Response Trust Fund (Superfund) to include additional sources of revenue. While the brass mill industry recognizes the need to increase revenues to fund the cleanup of abandoned waste sites containing hazardous and toxic materials and substances, we are strongly opposed to expanding the list of substances subject to the Superfund tax to include non-hazardous and non-toxic materials which have not been shown to contribute to these sites. Copper metal and zinc have historically been and are now properly excluded from the list of substances subject to the Superfund tax.

The Council represents 20 domestic brass mill companies which account for over 85 percent of U.S. production of brass mill products. These companies roll, draw, or extrude from copper and copper alloys various types of brass mill products such as plate, sheet, strip, tube, pipe, rod and nonelectrical (mechanical) wire. Zinc is the industry's principal alloying element. (The zinc content of brasses ranges from 5% to 40%.) The American brass mill industry employs approximately 27,000 workers in 23 states and the economic health of this industry is dependent upon an adequate supply of reasonably prices copper and zinc.

Copper and zinc are vital industrial materials, essential to any industrialized economy, yet prices of both metals are depressed and the existence of our domestic industries threatened. Imports of refined copper which, as recently as 1979, were only about 10% of domestic consumption, jumped to 26% in 1983 and are expected to go higher. Imports of slab zinc were the third highest in history in 1983 and supplied 77% of U.S. requirements. The continued existence of the domestic brass mill industry is dependent upon adequate domestic supplies of copper and zinc which can be ordered continuously and supplied promptly. The industry simply cannot rely on foreign sources for its copper requirements. Delivery times for foreign copper are too extended, and the industry cannot competitively afford the massive warehousing of foreign copper that would be required to insure uninterrupted production by domestic brass mills.

Domestic copper and brass fabricators have also experienced sharply increased competition from imports. Imports of their copper products in 1984 averaged nearly 39% more than in 1983, while imports of their copper alloy products were up 47% over this same period. The chart on the following page (p. 3) shows the percentage increase for imports of various copper and copper alloy brass mill products. For some of these products, 1984 imports were nearly twice 1983 levels. This year, copper and brass fabricators have filed a series of "anti-dumping" and "countervailing duty" petitions before the USITC, a move which reflects their growing concern over the trade balance in copper and brass fabricated products.

PERCENTAGE INCREASE IN THE IMPORTS
OF COPPER AND BRASS MILL PRODUCTS FROM 1983-1984



SOURCE: COPPER AND BRASS FABRICATORS COUNCIL
INC., WASHINGTON, D.C., FEB. 6, 1985.

Both primary producers of copper and zinc, and fabricators of brass mill and wire mill products are facing intense foreign competition, and their balance of trade has deteriorated alarmingly in recent years. The additional economic burden that would result from the imposition of Superfund taxes would be counterproductive and unfair.

The imposition of an environmental excise tax on refined copper and zinc will result in a two-tier price structure consisting of higher-priced domestic world copper and zinc. Such two-tiered price structures would put U.S. fabricators at a competitive disadvantage with foreign fabricators and result in a related and further increase in the already high level of imports of fabricated products. On September 6, 1984, President Reagan refused to impose import restrictions on refined copper, as requested by domestic copper producers in an "escape clause" proceeding, precisely because to have done so would have created a similar two-tier price system which would have seriously disadvantaged the U.S. copper fabricating industry in favor of foreign fabricators.

No primary metals are currently subject to Superfund taxes, and there is no evidence to suggest that this policy should now be changed. EPA has completed a series of so-called "Section 301" studies that erroneously conclude that copper and zinc are eligible for Superfund taxation based on the mere presence of these elements at Superfund sites (without regard to their mobility/toxicity/hazard) and that the impact of these taxes would be "slight". Such a position is scientifically unsound and extremely unfair to domestic producers and fabricators of refined copper and of zinc. Both metals are benign, being neither toxic nor hazardous, nor of a character to be included in the Superfund cleanup program.

The original intent of Superfund was to tax toxic chemicals that contribute to hazardous waste sites. Refined copper and zinc are not toxic and should not be included on the taxable list. The metals themselves are environmentally benign. Those copper and zinc compounds which are classified as hazardous are already subject to Superfund taxes.

Last year's House bill to reauthorize Superfund (H.R. 5640) added refined copper and zinc to the list of taxable substances to raise additional revenue without addressing the economic impacts on these industries and despite Congress' earlier findings against taxing these metals. Furthermore, H.R. 5640 placed refined copper at a competitive disadvantage with aluminum, its chief competitive metal. Aluminum was not taxed in House bill 5640 on the grounds that it is nontoxic. Copper and zinc are no more toxic than aluminum, and none of them should be taxed.

Two House bills in this legislative session—H.R. 1775 (Representative Moore) and H.R. 2022 sponsored by Representative Sikorski—using the list of taxable substances from H.R. 5640—call for copper metal and zinc to be taxed, but not aluminum.

While the Council supports reauthorization of Superfund, we believe that the tax provisions applicable to refined copper and zinc in H.R. 5640 were unfair and enacted without appropriate consideration of the impact on the affected industries.

In conclusion, we all recognize the need to fund the cleanup of abandoned waste sites containing hazardous and toxic materials and substances. But to impose an environmental excise tax on a limited number of metal working industries, and not on their competitive counterparts (in this case, aluminum), nor on all industries whose non-toxic and non-hazardous products, by-products, or wastes are also "found" at such sites, is blatantly discriminatory, unfair, and without rational justification. Accordingly, we strongly urge the exclusion of refined copper and zinc from the tax provisions of the Superfund reauthorization bills now being considered by the Committee on Ways and Means.

MEMBERSHIP LIST

Arco Metals Company, Two Continental Towers, 1701 Golf Road, Rolling Meadows, Illinois 60008.

Bridgeport Brass Corporation, P. O. Box 51519, Indianapolis, Indiana 46251.

Cerro Copper Products Company, A Member of the Marmon Group, P. O. Box 681, East St. Louis, Illinois 62202.

Cerro Metal Products, A Division of The Marmon Group, Post Office Box 388, Bellefonte, Pennsylvania 16823.

Chase Brass & Copper Company, P. O. Box 39548, Solon, Ohio 44139.

Chicago Extruded Metals Company, 950 York Road, Suite 205, Hinsdale, Illinois 60521.

Extruded Metals, 29100 Northwestern Highway, Suite 380, Southfield, Michigan 48034.

Halstead Metal Products, Highway 311, Pine Hall, North Carolina 27042.
Heyco Metals, Inc., Stinson Drive, R. D. 9160, Reading, Pennsylvania 19605.
Hussey Copper, Ltd., Leetsdale, Pennsylvania 15056.
The Miller Company, 99 Center Street, Cleveland, Ohio 44117.
Mueller Brass Company, 1925 Lapeer Avenue, Port Huron, Michigan 48060.
The National Copper & Smelting Company, 6075 Cochran Road, Solon, Ohio 44139.
New England Brass Company, Taunton, Massachusetts 02780.
Olin Corporation—Brass Group, East Alton, Illinois 62024.
Revere Copper Products, Inc., P. O. Box 300, Rome, New York 13440.
Spartan Copper Products, Inc., P. O. Box 1138, Hillsboro, Texas 76645.
Ullrich Copper, Inc., 2 Mark Road, Kenilworth, New Jersey 07033.
Volco Brass and Copper Company, Kenilworth, New Jersey 07033.
Waterbury Rolling Mills, Inc., Post Office Box 550, East Aurora Street, Waterbury, Connecticut 06720.

COPPER DEVELOPMENT ASSOCIATION, INC.,
Greenwich, CT, May 6, 1985.

Hon. DAN ROSTENKOWSKI,
Chairman, Ways and Means Committee, U.S. House of Representatives, Washington, DC.

DEAR CHAIRMAN ROSTENKOWSKI: On behalf of the 100 member companies of the Copper Development Association Inc., I submit herewith a brief statement on copper metal taxation and ask that it be made a part of the record of hearing on the Superfund re-authorization scheduled for May 9, 1985.

CDA is an industrywide organization of copper producers (mines, smelters, refineries) and fabricators (brass mills, wire and cable mills, foundries) doing business in the United States of America. It is engaged in technical development activities aimed at expanding the usefullness of copper in the U.S. economy and, thereby, generating new applications for copper.

CDA supports the re-authorization of Superfund. We are certain, however, that it would be erroneous to include copper metal itself in the Superfund legislation now under consideration.

It is a simple fact of nature that copper is an essential element for humans as well as other animals and plants. Copper is not toxic or dangerous in any way in the context of Superfund, as is explained in the enclosed statement, and its downstream uses do not generate dangerous toxic wastes.

Your consideration of these facts and inclusion of the attached statement in the hearing record will be appreciated. If we can be of help to you and the Ways and Means Committee, please let us know.

Very truly yours,

GEORGE M. HARTLEY,
President.

Enclosure.

STATEMENT OF GEORGE M. HARTLEY, PRESIDENT, COPPER DEVELOPMENT ASSOCIATION, INC.

Copper Development Association Inc. (CDA) is an industrywide trade organization of 100 member companies located throughout the U.S.A. They are engaged in the production (mines, smelters, refineries) and fabrication (brass mills, wire mills, foundries) of copper. CDA is a technology-based organization devoted primarily to expanding the usefulness of copper in the U.S. economy and, thereby, generating new applications for copper and copper alloys.

CDA supports the re-authorization of Superfund and the goals it embodies. Under the current Superfund law, three copper chemicals are taxed as feedstock substances. The question has arisen whether copper metal itself should be added to the list of taxable substances. CDA believes that it would be totally erroneous to tax copper itself, for the reasons which follow.

Copper is not only non-toxic in the generally understood meaning of that term, but is in fact essential to the metabolism of humans as well as other animals and plants. Scholarly references exist in abundance supporting copper's essentiality and non-toxicity in life on earth. Evidence surrounds us that copper is a benign presence in the ecosystem. Of major significance is the fact that about 90 percent of the potable water distribution piping in the U.S.A. is copper. At least 90 percent of the water that is consumed by the U.S. population passes through copper tubing, and essentially all the remaining water consumed passes through copper or copper alloy valves, fittings and faucets. Thus, the water drunk by nearly all the people in the U.S.A. is exposed boldly to copper and/or copper alloys immediately before it is consumed with no ill effects. In addition, copper and copper alloys are everywhere in the environment from utensils to coins, jewelry, hardware, decorative items and wiring to cite a few examples.

Where misconceptions exist about the toxicity of copper, it usually results from insufficient understanding of the difference between ionic copper (and its biocidal properties) and copper metal. Copper in ionic form, under conditions of finite and direct exposure, can be toxic to bacteria and to certain other lower forms of life. When copper chemicals are employed in this way, it really amounts to an extension of the benign character of copper in the environment. Copper (in chemical form) is in fact a permitted treatment for potable water supplies to maintain their purity. Copper alloy doorknobs in hospitals have been shown to be more sanitary than stainless steel. Copper chemicals, already appropriately covered in Superfund, are used as fungicides and algicides in agriculture and public health.

It is also pertinent that copper is the most recycled of the engineering metals. The technology of copper recycling is so simple and attractive that there is a strong economic incentive to conserve and reuse copper and its alloys, and it is rare indeed that any copper metal product is discarded. As a result, about half the copper that goes into mill and foundry products in the U.S.A. each year comes from recycled resources.

In summary, the production of the metal copper, as well as its fabrication, and its other downstream uses, does not impose a toxic burden on the environment. Based on technological considerations, the imposition of a tax on copper production under Superfund would be erroneous.

STATEMENT OF THE EDISON ELECTRIC INSTITUTE

Edison Electric Institute (EEI) appreciates the opportunity to present this statement concerning the tax provisions of the Hazardous Substance Response Trust Fund as provided for under the Comprehensive Environmental Response, Compensation, and Liability Act (Superfund).

EEI is the association of investor-owned electric utility companies whose members provide service to 96 percent of all customers served by the investor-owned segment of the industry. EEI member companies generate approximately 75 percent of all the electricity in the country and service 73 percent of all ultimate customers in the nation.

EEI supports the objective of hazardous substance cleanup as proposed in Superfund legislation. While we concur with the worthy objectives of such legislation, we cannot endorse a tax on the electric ratepayer to address the problem of hazardous waste cleanup which indiscriminately imposes culpability on all large corporations. Any taxation system which does not attempt to match tax liability with actual environmental liability is inequitable.

Congressman Sikorski (D–MN) has introduced a bill (H.R. 2022) to raise additional revenues to be used for an expanded cleanup effort. This statement presents EEI concerns with respect to this bill.

H.R. 2022 would greatly increase the existing tax on petroleum. This tax also would increase the cost of electricity to our customers in certain areas of the country. Some electric utility companies, particularly those in the Eastern half of the United States, must use substantial quantities of oil to generate electricity. Under present law, oil used to generate electricity is subject to the same excise tax as oil used as a feedstock in petrochemical plants. This tax liability is imposed even though no problems related to hazardous substances result from such electric generation. The absence of problems related to hazardous substances is explained by the fact that utilities use high temperature, high efficiency boilers and the environmental activities related to generation of electricity is closely regulated under federal and state laws. For oil-burning utilities, an increase in the tax on petroleum will increase fuel costs which in turn will cause higher electricity rates for customers. Unless oil used to generate electricity is exempted, we are opposed to any significant increase in the Superfund tax on petroleum. Such an increase would require electric utility customers to make additional contributions to cleanup efforts unrelated to their consumption of electricity.

In conclusion, we believe that any Superfund taxation system should match tax liability with the amount and toxicity of hazardous substances that electric utilities dispose of at Superfund sites. In our opinion, the imposition of an additional tax on electric utility customers when the utility did not contribute to a Superfund problem is inequitable.

Thank you for the opportunity to present our views on this important legislation.

STATEMENT OF THE INDEPENDENT FUEL TERMINAL OPERATORS ASSOCIATION

On May 9, 1985, the House Ways and Means Committee held a hearing on possible taxing mechanisms and levels of taxation needed to fund the Comprehensive Environmental Response Compensation and Liability Act ("Superfund"). The Independent Fuel Terminal Operators Association ("IFTOA") hereby submits comments on the appropriate level of such taxation. In brief, our Association believes that the petroleum industry is already paying more than its "fair share" to finance the Superfund and, therefore, the current petroleum tax should not be increased.

IFTOA is an association composed of 16 companies which operate deepwater oil terminals along the East Coast from Maine to Florida.[1] None is affiliated with a major oil company. Members are primarily marketers of residual fuel oils (Nos. 4, 5 and 6 fuels) and home heating oil (No. 2 fuel); several companies also market significant volumes of gasoline at wholesale and retail levels. Members handle nearly 50% of the non-utility residual fuel oil shipped to the East Coast, nearly 60% of the non-utility residual fuel oil shipped to New England, 25% of the No. 2 heating oil shipped to the East Coast, and more than 50% of the No. 2 heating oil shipped to New England.

I. PURPOSE OF SUPERFUND

When Congress created the Superfund in 1980, its basic objective was to assure protection of the public health and the environment in a cost-effective manner. The bill provided for the development of an inventory of inactive hazardous waste sites, the establishment of priorities among the sites based on relative danger, elimination of those sites and establishment of a funding mechanism to achieve these objectives. To finance that clean-up effort, the Superfund Act imposes a tax on chemical and petroleum feedstocks; that tax currently raises $300 million annually, and the Environmental Protection Agency ("EPA") has cleaned up six sites.

In recent years, the Congress has recognized that the problem of cleaning up hazardous waste sites is much more complex, difficult, and costly than originally anticipated. Accordingly, several members have proposed increasing the feedstock tax significantly or imposing additional taxes, particularly on hazardous waste disposal. While these solutions may be appropriate with regard to the chemical industry, they are most inappropriate for petroleum for the following reasons.

II. PETROLEUM COMPONENT OF WASTE SITES

First, a recent study [2] by Westat Research, Inc., prepared for the Office of Solid Waste of the Environmental Protection Agency, concludes that the current petroleum tax of $.0079 per barrel provides 15 percent of the revenues raised under the Superfund Act. However, according to the report, petroleum refining wastes amount to only about 3 percent of the hazardous waste generated in the United States. Because petroleum is not a significant component of waste sites and not a primary cause of contamination, there is no reason to increase the tax paid by the petroleum industry above its current level. Congress has before it proposals to increase the tax by as little as $.02 to as much as $.14 per barrel. Because profit margins in the industry are small and competition substantial, the industry would not be able to pass very much of the tax through to consumers; rather, it would have to absorb it. Clearly, it would be unfair to force one industry to bear such a disproportionate burden of the cost of dealing with a nationwide problem. As indicated above, the reauthorization legislation should, in fact, reduce, not increase, the petroleum tax, to bring the burden on the industry in line with the volume of hazardous waste it creates.

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[1] A list of members and a more detailed description of the Association is attached. (Attachment A).

[2] See WESTAT Research, Inc., "National Survey of Hazardous Waste Generators and Treatment, Storage, and Disposal Facilities Regulated Under RCRA in 1981," prepared for the Office of Solid Waste, EPA, April 20, 1984.

III. CURRENT DISPOSAL PRACTICES

Second, since 1980, when the EPA promulgated its regulations [3] implementing the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. §§6901 et seq., the petroleum industry has spent millions of dollars to maintain comprehensive "cradle to grave" procedures and records regarding disposal and/or treatment of the hazardous wastes which they generate. Compliance has become a major cost of doing business. While Congress may deem these expenditures essential to maintaining a healthy environment, there is no reason why an entire industry must pay a significant tax under Superfund to clean up old disposal sites, particularly when the petroleum component of those sites is de minimus. Compliance costs are more than enough payment.

IV. PUBLIC BENEFIT

Third, the United States has made a national commitment to cleaning up abandoned waste sites and providing a safer environment in which to live. As a result, all citizens should pay to clean up these health hazards, for all citizens benefit from their elimination. Moreover, even if the Committee chooses to place the blame more specifically and require industry to pay the clean-up costs, that burden should be placed on members of the chemical industry—the primary generators of hazardous waste.

In sum, (1) the petroleum industry pays a far greater proportion of tax than is represented by the petroleum hazardous wastes found in abandoned waste sites, (2) the industry already pays significant costs to ensure current and future compliance with RCRA hazardous waste management procedures, and (3) the environmental problems posed by sites and the benefits derived from their elimination are problems and benefits of the general public. Accordingly, the Independent Fuel Terminal Operators Association strongly recommends that the petroleum industry not bear any additional financial burden under the Superfund legislation and that the current tax of $.0079 per barrel on petroleum not be raised.

Attachment A

MEMBERS OF INDEPENDENT FUEL TERMINAL OPERATORS ASSOCIATION

Astroline Corporation, Saugus, Massachusetts.
Belcher Oil Company, Miami, Florida.
Bray Terminals, Inc., Albany, New York.
Colonial Oil Industries, Inc., Savannah, Georgia.
Global Petroleum Corp., Waltham, Massachusetts.
Meenan Oil Co., Inc., Syosset, New York.
Northeast Petroleum Corp., Chelsea, Massachusetts.
Northville Industries Corp., Melville, New York.
Quinoil Industries, Inc., Quincy, Massachusetts.
C.H. Sprague & Son Company, Boston, Massachusetts.
Steuart Petroleum Company, Piney Point, Maryland.
Swann Oil, Inc., Philadelphia, Pennsylvania.
Ultramar Petroleum, Inc., Montvale, New Jersey.
Webber Tanks, Inc., Bucksport, Maine.
Whaleco, Brooklyn, New York.
Wyatt, Inc., New Haven, Connecticut.

The 16 companies listed above own and control terminals capable of receiving ocean-going tankers. None is affiliated with a major integrated oil company. Members of the Association are independent marketers of No. 2 fuel oil, No. 6 fuel oil, gasoline and other petroleum products.

They distribute more than 50% of the No. 2 fuel oil consumed in New England and nearly 25% of the No. 2 fuel oil consumed along the East Coast. They distribute nearly 60% of the residual fuel oil burned by non-utility consumers in New England and nearly 50% on the East Coast.

The 16 companies own and control 57 deepwater terminals and 42 barge terminals, with a total storage capacity of over 58 million barrels. Of the total, about 26 million barrels are for No. 2 fuel oil, about 24 million barrels are for residual fuel oil, and about 7.4 million barrels are for gasoline and other products.

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[3] 40 C.F.R. §§260 et seq.

WASHINGTON, DC, *May 15, 1985.*

Hon. DAN ROSTENKOWSKI,
Chairman, Committee on Ways and Means, U.S. House of Representatives, Washington, DC.

DEAR MR. CHAIRMAN: I am writing on behalf of the Lithium Corporation of America, one of two domestic producers of lithium carbonate. As you are aware, H.R. 5640, which the House passed last August, included lithium carbonate on an expanded list of chemical feedstocks that would be taxed to help pay for the Superfund program. I believe that the inclusion of lithium carbonate as a taxable feedstock was not fully considered by the 98th Congress. And, for the reasons outlined below, I urge the Committee not to include it as a feedstock in this year's reauthorization measure.

By way of background, lithium carbonate is an extremely versatile substance with many end uses including the production of Vitamin A and the reduction of flouride pollution in the manufacture of aluminum. It is also widely prescribed as a medicine in the treatment of manic depression.

It is not clear why the taxation of lithium carbonate was ever proposed and there appears to be no documented justification (at EPA or elsewhere) for its addition to the Superfund feedstock list. It is neither a listed or characteristic waste under Resource Conservation and Recovery Act (RCRA) or a hazardous substance under the Comprehensive Environmental Response, Compensation and Liability Act (Superfund).

In 1980, when Superfund was enacted, the Senate Environment and Public Works Committee explained the basis for taxing certain feedstocks. The fee is assessed on substances which are either hazardous themselves or are the basic building blocks (petrochemicals, inorganic raw materials and petroleum) used to make virtually all major hazardous substances. (S.Rep. No. 848, 96th Cong. 2d Sess., pp. 72-73, (1980)). Recently, seven criteria have been proposed for evaluating substances for Superfund taxation (Joint Committee on Taxation, Staff Report "Background and Issues Relating to the Reauthorization of Superfund," 98th Cong., 2d Sess., pp. 40-41 (1984)):

(1) The raw material, its intermediate or final product, is found at 1 or more of Superfund sites that are candidates for remedial action as indicated in the Hazard Ranking System (HRS) data base, in a Fund-financed removal action, or in an enforcement action; (2) hazardous wastes generated in making the raw material or a number of its intermediate or final products are found at 2 or more of the HRS sites, in a Fund-finance removal action, or in an enforcement action site; (3) the raw material itself is a designated hazardous substance pursuant to CERCLA; (4) hazardous wastes are generated in making the raw material, its intermediate or final products; (5) the raw material is hazardous in a number of forms (e.g., as a raw material, an intermediate or final product); (6) the raw material is capable, in one or more forms, of increasing the hazard potential of other substances; (7) the raw material is hazardous in some form (e.g., gas, liquid, solid), if released (e.g., spilled).

Judged by these seven standards, lithium carbonate does not warrant inclusion as a taxable feedstock:

First, lithium carbonate has not been found in its raw, intermediate or final product form at any Superfund site,

Second, production of lithium carbonate does not generate hazardous wastes. Although it is true that waste from tritium, a remote derivative of lithium carbonate, has been found at one proposed Superfund site (the Maxey Flats site in Fleming County, Kentucky), it should be emphasized that this site (which is owned by the Commonwealth of Kentucky) was used primarily by federal agencies for the disposal of nuclear wastes.

Third, lithium carbonate is not a hazardous substance under Superfund. This means that lithium carbonate has not been listed as toxic or hazardous under RCRA, the Toxic Substances Control Act, the Clean Air Act or the Clear Water Act. One (and only one) lithium carbonate derivative, lithium chromate, has been listed as a hazardous substance pursuant to Superfund. However, it is worth noting that lithium chromate's hazardous substance designation is based on its chromate, not its lithium content. This is apparent from review of EPA data supporting this designation, which specifically refers to data for sodium chromate toxicity. Chromium and chromite are, of course, already taxed under the current statute.

Fourth, lithium carbonate production does not generate any listed or characteristic hazardous waste.[1] Any hazardous wastes generated during the use of lithium carbonate in the manufacture of other products is insignificant.

Fifth, as indicated above, lithium carbonate is not hazardous and only two distant derivatives, tritium and lithium chromate, are of concern.

Sixth, lithium carbonate does not increase the hazard potential of other substances.

Seventh, lithium carbonate is not hazardous when released (e.g. spilled).

Evaluated by the Joint Committee's criteria, it is clear that lithium carbonate does not warrant treatment as a taxable feedstock under Superfund. It is also clear that lithium carbonate's only apparent "link" to a Superfund site is the presence of tritium at the Maxey Flats site. Tritium (perhaps the least dangerous radioactive substance) was disposed of primarily by the federal government under conditions that both the federal government and the Commonwealth of Kentucky regarded as safe. The failure of the government to properly control its own disposal operations should not be used as a justification for taxing lithium carbonate. It should be emphasized that the quantity used to produce the lithium-6 isotope (which in turn is used to produce tritium) is a tiny fraction of U.S. production. Obviously, it would make more sense to tax tritium directly since that is the substance causing the problem.

Finally, I would like to bring your attention to EPA's treatment of lithium carbonate in its recent section 301(a) (1) (G) study. The study appears to recommend (without any analysis or justification) that lithium carbonate be taxed at the astonishing rate of $328.57 per ton—even though the contribution factor[2] was ranked at the lowest possible level (i.e. 0.01 percent), Compare this suggested tax rate to the rate proposed for nitric acid (which also has a "contribution" factor of 0.01 percent) but which would be taxed at a rate of one cent per ton. (See enclosure). It is difficult to understand the disparity between these two rates, or for that matter why lithium carbonate would be a candidate for any level of taxation under Superfund.

On behalf of the Lithium Corporation of America, I would appreciate your assistance in assuring that this year's Superfund reauthorization legislation will be based on informed, equitable and rational judgments about sources of revenue. For the reasons outlined above, I believe there is no sound reason to include lithium carbonate as a taxable feedstock.

I request that this letter be included as part of the record in connection with the Committee's deliberations on the reauthorization of the Comprehensive Environmental Response, Compensation and Liability Act (Superfund).

Sincerely,

CHRISTOPHER HARRIS,
Counsel, Lithium Corp. of America.

Enclosure.

EXHIBIT 4-4.—CALCULATION OF FEEDSTOCK TAX II RATES

Feedstocks	Contribution (percent)	Tax bill (in millions of dollars)	Tax rate [3] (dollars per ton)
Acetylene	0.75	$7.5	$42.61
Aluminum	0.14	1.4	0.20
Ammonia	1.27	12.7	0.65
Antimony	0.03	0.3	0.09
Antimony trioxide	0.03	0.3	13.64
Arsenic	1.58	15.8	([2])
Arsenic trioxide	1.58	5.8	290.00
Asbestos	0.88	8.8	36.67
Barium sulfide	0.20	0.2	28.57
Benzene	13.38	133.8	22.26
Boron trioxide	0.09	4.0	5.78
Bromine	0.35	3.5	19.34
Butadiene	0.08	0.8	0.45

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[1] The Lithium Corporation does not have a RCRA permit for the treatment, storage or disposal of hazardous waste because none is required.

[2] This "contribution factor" is, of course, the direct result of the federal government's disposal of tritium at the Maxey Flats site.

EXHIBIT 4-4.—CALCULATION OF FEEDSTOCK TAX II RATES—Continued

Feedstocks	Contribution (percent)	Tax bill (in millions of dollars)	Tax rate [3] (dollars per ton)
Butane	0.43	4.3	1.48
Butylene	0.57	5.7	2.52
Cadmium	2.38	2.8	687.54
Calcium oxide	0.17	4.8	0.32
Chlorine	25.05	250.1	20.67
Chromite	0.04	0.4	1.59
Chromium	4.36	43.6	641.18
Coal coke	3.57	35.7	1.90
Cobalt	0.05	3.6	400.00
Copper	0.67	9.8	4.25
Crude oil	2.44	120.0	0.17
Ethylene	4.20	42.0	2.67
Hydrochloric acid	0.79	7.9	2.83
Hydrogen fluoride	0.29	6.0	27.52
Iron (pig)	0.33	6.4	0.10
Lead	6.59	65.9	49.14
Lithium carbonate	0.01	4.6	328.57
Manganese	0.21	2.1	233.33
Mercury	2.14	4.4	3,050.06
Methane	2.66	26.6	2.74
Naphthalene	0.76	4.6	81.87
Nickel	0.36	6.7	25.48
Nitric acid	0.01	0.1	0.01
Other	7.29	(3)	(3)
Phosphoric acid	0.34	3.4	0.36
Phosphorus	0.14	4.5	15.68
Potassium hydroxide	0.03	3.4	31.78
Propylene	2.07	20.7	2.68
Selenium	0.38	1.6	2,206.33
Sodium hydroxide	0.99	9.9	0.83
Sulfuric acid	1.44	14.4	0.35
Toluene	4.50	45.0	46.83
Uranium oxide	0.93	9.3	620.00
Vanadium oxides	0.16	1.6	200.00
Xylene	2.15	21.5	7.88
Zinc	1.14	11.4	10.82
Total	100.00	1,000.0	

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[1] Tax rates calculated to exceed one-third of a feedstock's 1985 projected price were adjusted downward to one-third of price. The reduction in revenues was offset by increased taxes on other feedstocks. This adjustment is explained in detail in the text.

[2] Production figures were not available for arsenic; thus, it was not possible to compute its tax rate.

[3] Because of the difficulty of taxing "other" substances, the tax bill has been spread among the other feedstocks.

Source: ICF Incorporated analysis of HRS data.

STATEMENT OF EARL N. BRASFIELD, VICE PRESIDENT, MONSANTO CO.

My name is Earl N. Brasfield. I am a Vice President of Monsanto Company and Managing Director of the Fibers and Intermediates operating unit.

Monsanto is a multinational manufacturer of a widely diversified line of products which include chemicals, man-made fibers, agricultural products, electronic materials, industrial process controls and other capital equipment. With sales in 1984 of $6.7 billion, we manufacture or market our products in every state and in about 100 other nations. More than 50,000 people are employed by Monsanto worldwide, with 38,000 located in the United States.

In previous appearances before this Committee and the Energy and Commerce Committee, other Monsanto executives have proclaimed their support of a robust, workable Superfund law to clean problem hazardous waste sites. I, too, subscribe to that point of view.

However, my purpose today is to provide this committee with Monsanto's views on the size of the fund and the tax authorization proposals for its funding. We agree that there is the need to raise the significant funds needed to clean up abandoned waste sites. We also are strongly convinced that where responsible parties can be identified, that they bear the costs of such clean up. In addition, industry will support tax proposals that are broader in scope than those presently used and are not punitive. Let me explain.

First, we share EPA's concern that they may not be capable of effectively spending more than $5.3 Billion over the next five years. In our cleanup program, we are experiencing some of the same constraints that make it impossible to clean up sites as fast as we had hoped initially.

We are of the opinion that these limitations cannot be solved or accelerated by statutory mandate. For example, it takes time to gain the public's cooperation to find and develop safe sites to which cleaned up hazardous wastes can be moved for proper disposal or destruction. Such safe sites are needed because the Superfund law prohibits cleaning up an abandoned hazardous waste site until another approved site or disposal facility is available to receive the waste. Therefore, the annual funding levels should reflect reality and admit that there are constraints that can not be resolved by throwing money at them.

In addition, we feel that several of the reauthorization bills being considered include inappropriate tax increases and tax mechanisms for financing the fund. The taxing mechanisms put in place should be fair, effective and not punitive. Furthermore, these taxes should not make any U.S. industry or segment of an industry less competitive in the world market.

Some of the reauthorization proposals being considered by the Congress include a broad-based tax on manufacturers in general. My colleagues and I think such a tax is important to the success of the Superfund program because it would provide revenue from a broader base than the current law. This is not punitive but in our opinion fair and just. Not only does the entire economy benefit from the output of the chemical industry, but other industries as well have contributed to the hazardous waste problem facing this country without contributing monies to the Superfund.

Imposing an excessive tax burden on the chemical industry makes us less competitive in the international arena. The impact of the tax proposals can not be looked at on a broad-brush approach, but instead the impact on specific product chains such as the acrylonitrile example I will detail later must be considered. Resorting to more realistic taxing proposals will help preserve U.S. jobs in the chemical and allied industries.

Next, Monsanto supports the feedstock tax, but only at the current rates. Raising the rates would exacerbate an already inequitable situation where a small number of U.S. companies—12 at last count—pay more than 70 percent of the Superfund taxes collected. A significant increase in the feedstock tax rates would dramatically increase the burden imposed on these firms and their customers, jeopardizing their ability to compete worldwide.

Monsanto also supports the principle of a hazardous waste or "waste end" tax. Although we have concerns about such a tax, it does have two significant benefits. First, a waste end tax would broaden the base of those contributing to the Superfund tax and, secondly it would serve as a financial incentive to control hazardous waste production.

We do, however, oppose a wet weight basis for this tax. Taxing hazardous wastes on a wet weight basis, rather than dry weight imposes a disproportionate burden on some industries because it would tax harmless, highly dilute wastewater that usually is treated before disposal. Furthermore, the tax burden would fall most heavily on injection well disposal instead of being spread more uniformly over it and the other principal disposal methods of landfill and impoundment. To reduce the tax burden, companies are very likely to simply reduce the amount of water in their waste greatly diminishing the environmental benefits of a hazardous waste tax. Adopting a dry weight basis for the tax places the tax burden on the hazardous component of waste, not water, which seems to be more sound from an environmental point of view.

Treatment should clearly be excluded as a taxable event. The waste end tax should be applied only to disposal of hazardous waste by landfill, deep-well injection, ocean disposal, land farms, and surface impoundment for more than one year.

We also are of the opinion that the disposer, rather than the generator, should be liable for the tax, thereby enabling EPA and the IRS to substantially simplify the tax collection process from several thousand taxpayers to a few hundred.

As a major participant in the acrylonitrile industry, which would be significantly impacted by some of the proposals being considered, I have seen first hand the results of being at a competitive disadvantage. The domestic members of this industry compete in an international market where prices are set without regard for U.S. tax policy. Daily we confront stiff competition here and abroad and, as mature commodities businesses, enjoy only slim profit margins at best. We constantly are faced with the prospect of having to close plants and serve customers who face similar challenges.

Earlier this year, Monsanto announced the shutdown of some of its acrylic fiber capacity, a major user of acrylonitrile, with the loss of 650 jobs. As a result of this and similar actions by other industry participants, the acrylonitrile and its associated industries have lost 50,000 jobs in the last few years.

A closer look at this industry should help clarify our point of view and dramatically illustrate the need for broadening the sources for funding the Superfund.

Acrylonitrile is made from propylene and ammonia, two feedstocks currently taxed under the Superfund. Acrylonitrile is used to produce acrylic fibers and plastic resins for such consumer products as carpets, apparel, refrigerators, plastic pipe, auto components, safety windows and drinking cups.

Worldwide, the acrylonitrile industry suffers from overcapacity. In recent years the utilization rate has been at only 70 percent. This depresses the world price, now below 35 cents per pound, and leaves little room for the price increase that would be needed to compensate for additional tax costs. Domestic utilization has been better because 40 percent of U.S. production is exported.

Despite its better utilization rate, it is apparent that the domestic acrylonitrile industry is not isolated from the world market. In fact, it depends on world markets. Given the present overcapacity, if the domestic industry is made less competitive by additional taxes, foreign producers will step in and cut into our export business. Higher domestic prices for acrylonitrile would make it possible for foreign producers to sell into the domestic market as well.

With prices skirting costs and leaving less than the margin required to justify reinvestment, it should come as no surprise that the industry is shrinking. A production unit was closed permanently in 1982 and only four producing companies remain operating six production units.

Simply stated, the acrylonitrile industry does not have a deep pocket and it is crucially dependent on the ability to continue exporting a large portion of its production into the world market. The proposed increase in feedstock tax rates of HR 2022, for example, threatens that ability by reducing profit margins or possibly pricing domestic producers out of the world market.

Similarly, the production of acrylic fiber is endangered by this legislation. About 50 percent of the acrylonitrile consumed in this country is used to produce acrylic fibers. On the average, about 700 million pounds of acrylic fiber is produced annually. Like the acrylonitrile industry, the U.S. acrylic fibers industry is embattled and engaged in a struggle for survival. Competition is tough at home and abroad, prices are weak because of this competition, and profit margins are extremely slim.

Although industry annual capacity stands at 805 million pounds, that is substantially below the capacity level of as recent as 1980, and actual production is even less. The industry's problems led one firm to exit the acrylic fibers business, leaving four firms producing acrylic fibers in five plants in Alabama, Florida, Virginia and South Carolina. Monsanto, as already mentioned, also has been forced to shutdown some acrylic fiber capacity. Just this past February we announced we were closing down part of our acrylic fiber plant in Alabama and eliminating 650 jobs in our organization as a result.

The customers of the acrylic fiber industry are in even worse shape. Every day, the downstream textile and apparel industries confront competition from low labor cost nations. Imports from these countries represent about 25 percent of total U.S. textile consumption, and have reached over 40 percent in wearing apparel. The situation has become so unfavorable that bills have been introduced in the Congress to limit imports of textile products.

Here again, we have a cost sensitive industry attempting to meet the challenge of imports and to keep jobs in this country. The textile and apparel industries account for more than two million jobs, many of them located in the southeastern states of North Carolina, South Carolina and Georgia, as well as in garment centers such as New York. Because U.S. produced acrylic fibers are represented in five percent of the total textile consumption, about 100,000 jobs can be linked to the fiber.

The pattern does not change for the second major acrylonitrile customer, plastic resins, called ABS/SAN. Production and the number of producers of the plastic resins based on acrylonitrile both have recently declined. Instead of five firms, there are now three in the industry. Ten plants, located in California, Connecticut, Illinois, Iowa, Massachusetts, Michigan, Mississippi, Ohio and West Virginia, manufacture plastic resins based on acrylonitrile for use by molding shops throughout the country.

Competition comes from imports, which are a small but significantly increasing part of domestic consumption, and other types of resins produced both in the United States and abroad. For example, 1984 ABS imports were almost double those of 1983. The industry, therefore, is cost-sensitive and does not enjoy profit margins sufficient for reinvestment.

Although acrylonitrile currently is not included in the schedule of substances taxed under the Superfund, it does bear the pass-through burden of the tax imposed on its principal feedstocks, ammonia and propylene. The cost of the pass-through, which is separately listed and billed on sales invoices for ammonia and propylene, amounts to about one percent of the sales price. If the feedstock tax on ammonia and propylene is increased to the extent proposed by HR 2022, the levy will amount to three percent of the acrylonitrile sales price, just about wiping out the existing profit margin for this product.

Unlike propylene and ammonia producers, the acrylonitrile industry will not be able to list the tax as a separate invoice item and pass it directly on to the next customer. The tax becomes a part of the cost-of-goods sold, and can be recovered only with an increase in the market price, a highly unlikely possibility because of stiff international competition.

The future of the acrylonitrile industry will be further undermined if the $5 per wet ton hazardous waste tax, such as proposed in HR 2022, is imposed. It would result in a total Superfund tax burden of six percent of the acrylonitrile sales price: three percent for hazardous waste disposal and three percent for petrochemical feedstocks. This hazardous waste disposal tax would total about $25 to 30 million per year for the entire industry. In fact, the total hazardous waste disposal and petrochemical feedstock tax of $40 to 50 million per year is excessive when compared to acrylonitrile's current profit margin.

The imposition of Superfund taxes amounting to six percent of sales price will have significant implications for the acyrlonitrile industry. Prices will have to be raised because profit margins are already very narrow, even less than the proposed additional tax burden. This action will make U.S. acrylonitrile less competitive internationally, possibly to the point of driving it out of the crucial export market. The availability of excess international acrylonitrile capacity to replace our export sales will lead to—even accelerate—our retreat.

Domestically, production capacity formerly supported by export sales will likely be shut down. Remaining domestic customers of acrylonitrile, especially the acrylic fibers industry, will bear the pass-through burden of the added taxes.

A similar cycle will then be set in motion for the acrylic fibers industry, which currently is suffering under adverse economic conditions. Plant shut-downs or cut backs probably will occur as the impact of the tax and its economic effects ripple downstream from acrylonitrile.

Monsanto participates in both the acrylonitrile and acrylic fibers industries. From our experience, 1984 profit levels for these products were significantly less than acceptable. And we do not expect a major profit improvement in 1985. Passage of a Superfund bill with significant tax levies effective in 1985 would make profits even less acceptable, thus putting into doubt the future viability of these businesses.

The acrylonitrile industry is one example of the damage H.R. 2202 would inflict on parts of our economy, especially those which are heavily committed to export sales, or operate in highly competitive markets. This committee, taking into account the case of the acrylonitrile and other industries, should not recommend adopting questionable Superfund tax policy, namely those that impose unfair and narrow, selective excise taxes. This committee should ensure that Superfund taxes are fairly distributed.

To assist the committee in developing sound Superfund tax policy, we offer the following suggestions as an appropriate means of raising Superfund revenues:

The size of Superfund should not exceed EPA's hazardous waste cleanup needs and spending capabilities.

Retain the feedstock tax at current levels.

Obtain the major portion of additional funding through a broad-based tax similar to that approved recently by the Senate Finance Committee.

Include a contribution from general revenues.

Include a modest waste disposal tax, but only if it is based on dry weight rather than wet weight. Setting a dry weight tax at $50 per ton would generate approximately $300 million per year. It would spread the tax burden uniformly over the three major waste disposal methods of injection, landfill, and impoundment.

Although what was expressed here today represents Monsanto's view regarding pending Superfund legislation, I am sure you will find that there is overwhelming support for these views from other industry members. Monsanto is willing to work with you or members of your staff to ensure the reauthorization bill that passes Congress will result in a fair and equitable Superfund program that will get the job done.

NATIONAL ASSOCIATION OF METAL FINISHERS,
May 9, 1985.

Hon. DAN ROSTENKOWSKI,
Chairman, Committee on Ways and Means, House of Representatives, Longworth House Office Building, Washington, DC.

DEAR CHAIRMAN ROSTENKOWSKI: The below-named organizations, together representing hundreds of thousands of businesses and educational institutions, wish to express their views on the reauthorization of Superfund.

One of the key issues in the reauthorization of Superfund regards the source of financing adopted by Congress to support the clean-up program. The related issues concerning the size of the fund and how it is to be used, are of vital importance to the business and educational communities.

The present five-year, $1.6 billion Superfund (the Hazardous Substance Response Trust Fund) is supported by a tax on chemical feedstocks and crude oil (87.5%) and general revenues (12.5%). In addition, private party site clean-ups exceeded several hundred million dollars over the past three fiscal years. In various ways, and to differing extents, all the proposals under consideration by Congresswould increase the funding devoted to Superfund. Industries presently paying the tax on chemical feedstocks and crude oil have arged that there are possible anti-competitive effects associated with such taxes, and will undoubtedly resist efforts to increase those taxes.

A number of proposals have been made to create broader-based financing mechanisms, on the grounds that a larger segment of society should assist in paying for hazardous waste clean-up. The impact of direct and indirect tax payments to support Superfund, including those made by the business and educational communities, should be an important consideration in the reauthorization of Superfund.

Businesses and educational institutions encounter increased costs due to:

—feedstock taxes, either through direct payment or indirectly through suppliers;

—the crude oil tax;

—state Superfund taxes that, in many cases, equal or exceed the Federal tax;

—new regulatory compliance costs associated with the Resource Conservation and Recovery Act;

—costs associated with site clean-up, sometimes well in excess of their relative contribution to a site, and always without regard to fault or negligence;

—legal costs which can exceed the amount of money needed for site clean-up; and,

—costly premiums for environmental impairment liability insurance (provided such insurance is available).

These direct and indirect financial burdens would be further increased if activities to be undertaken within the Superfund program are expanded. Consequently, we believe that the Superfund should be a targeted program with one objective: the best clean-up and remedial action at the largest number of sites in the shortest possible time at the lowest cost. Superfund is a remedial program, funded predominantly by industry, and as taxpayers financially supporting that program, we strongly believe it should retain a narrow, concentrated focus, aimed at fulfilling its primary mission.

We therefore make the following recommendations:

1. Congress should consider with great care any proposed broader-based financing mechanisms, because these proposals raise fundamental questions of tax policy and potential future abuses.

2. Congress should support the position of the Environmental Protection Agency as to the total size of the Superfund—approximately $1 billion per year—and should resist efforts to provide EPA with more money than it can productively spend.

3. The scope of the Superfund program should be tightly focused on clean-up of waste sites.

We respectfully request that this letter be made a part of the hearing record.

Thank you for your consideration of our views.

American Textile Manufacturers Institute.
American Retail Federation.
Synthetic Organic Chemical Manufacturers Association.
Petroleum Marketers Association of America.
Automotive Parts and Accessories Association.
Institute of Industrial Launderers.
International Fabricare Institute.

National Association of Metal Finishers.
American Council on Education.
Automotive Service Industry Association.
Independent Automotive Service Association.
American Furniture Manufacturers Association.
Automotive Service Councils, Inc.
National Independent Dairy Foods Association.
National Cotton Council.
Printing Industries of America.
Adhesives and Sealant Council.
National Automobile Dealers Association.
Greater Washington-Maryland Service Station Association.
Independent Lubricant Manufacturers Association.
Society of Independent Gasoline Marketers of America.

STATEMENT OF THOMAS D. WILCOX, EXECUTIVE DIRECTOR AND GENERAL COUNSEL, NATIONAL ASSOCIATION OF STEVEDORES

The National Association of Stevedores (NAS) is an association of privately-owned stevedore and marine terminal companies, providing essential cargo-handling services on all four U.S. seacoasts, the State of Hawaii and Alaska, the Commonwealth of Puerto Rico, and at various inland ports. Two major reasons compel our discussion of the proposed revenue measures and use of Superfund.

The first reason is the possible outcome of the U.S. Government's interpretation of the International Convention for the Prevention of Pollution from Ships (1973) as modified by the 1978 Protocol on Marine Pollution (MARPOL). Under current law, NAS members do not fall within any statutory definition of a person or entity that would render them subject to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Stevedores and marine terminal operators are not owners or operators of hazardous waste management facilities. Nor are they generators, transporters, storers, or disposers of hazardous waste.

The purpose of MARPOL is the reduction of pollution from ships at sea. This is accomplished by requiring the discharge of hazardous wastes to reception facilities ashore, rather than at sea. The implementing legislation for MARPOL, 33 U.S.C. Section 1905, directed the Coast Guard to set criteria for determining the adequacy of waste reception facilities at U.S. ports, and procedures for certifying a port or terminal as having adequate reception facilities.

What traditionally has been pumped overboard far out at sea must now be pumped ashore and someone must arrange for shoreside disposal. Coast Guard regulations do not yet make clear the position of the stevedore/marine terminal operator in the MARPOL regime, particularly as it would relate to CERCLA or the Resource Conservation and Recovery Act (RCRA). However, the objective of the stevedore/marine terminal operator is to stay out of the hazardous waste management business.

Second, the NAS is opposed to what we perceive to be bad public policy both in the form of inequitable revenue measures, and measures that detract from the primary Superfund goal of hazardous waste cleanup.

SUPERFUND REVENUE PROPOSALS

As the magnitude of the problem of hazardous waste increases, Congress and the Nation are searching for a means to pay for cleanup. NAS members support the cleanup of hazardous waste, and believe that the cost of undoing the damage caused by toxic pollutants should be borne by the industries that introduced them into the environment. Thus, the NAS opposes the concept of a broadly-based corporate net profits tax (NPT) assessed against industries and employers that do not generate, manufacture, or use toxic pollutants.

There are now three bills before the Senate that would tax U.S. industry in general: S. 596, introduced on March 6, 1985 by Senator Bradley; the corporate net profits tax provision contained in proposed Amendment No. 7 to S. 51, introduced on January 3, 1985 by Senator Stafford; and S. 957, introduced by Senators Wallop and Bentsen, which would impose a "manufacturer's excise tax" on the sale or lease by a manufacturer of the goods it produces. Attempts to diffuse cleanup costs throughout industry in general would be unfair to those industries and employers, such as NAS stevedores and marine terminal operators, who have in no way contributed to the hazardous waste problem. Moreover to the extent that the costs of cleanup are imposed upon blameless industries, major polluters would escape their liability.

If Congress should enact a tax such as the NPT, the NAS believes that the tax must be fair. Amendment No. 7 is not fair. This Amendment, introduced by Senator Stafford, would revise Chapter 38 of the Internal Revenue Code to permit the imposition of an Environmental Net Profits Tax on corporate net receipts [131 Cong. Rec. S526 (daily ed., January 22, 1985)]. In determining net taxable receipts for purposes of the new tax, the provision would permit a deduction by the corporate taxpayer of the costs of goods sold by the taxpayer during the relevant tax year (*Id.*, at S528). However, no reference is made to the allowance of a similar deduction by a corporate taxpayer for the costs of services sold.

The tax burden that would result from the Environmental Net Profits Tax proposed by S. 596, introduced by Senator Bradley on March 6, would be even more onerous than that contemplated by proposed Amendment No. 7. This bill proposes a lower threshold of corporate receipts to trigger operation of this tax, and increases six-fold the taxpayer's potential net liability over that contemplated by proposed Amendment No. 7. In addition, S. 596 also fails to refer to the allowance of a deduction by a corporate taxpayer of the costs of services sold for purposes of computing this tax. The NAS believes that this is a crucial omission. Our concern is that this tax provision, in either form, will result in unfair and unwarranted discrimination against the stevedore and marine terminal industry because it provides services, and is not a seller of goods.

Should either S. 596 or proposed Amendment No. 7 to S. 51 become law, NAS stevedores and marine terminal companies, as well as other service industries, would be confronted with an inequitable and uncertain situation. The failure to mention a deduction for costs of services sold would deny a deduction for these costs to service industries, and impose upon them an immense and inequitable additional financial burden. This burden would result because their corporate income is derived from the sale of services and not the sale of goods. The NAS urges the Committee to ensure that any tax provision of this nature makes available to corporate taxpayers a deduction for the costs of goods sold, and/or the costs of services sold.

A number of other proposals for generating Superfund revenue also have been made, including the expansion of the taxable chemical feedstock list, increasing feedstock tax rates, imposing a waste end tax, and the taxation of imported feedstock derivatives. There also have been recommendations that Superfund revenue be augmented through the use of General Revenues, and increased cost recovery through the collection of fines, costs and penalties assessed under CERCLA. The NAS takes no position at this time on the merits of any of the specific measures referred to above because the general impact of those revenue proposals would be felt most likely by industries other than the stevedoring and marine terminal industry.

However, where international trade is involved, the NAS opposes any government action which could interfere with or restrict the flow of U.S. international commerce. For example, H.R. 1775 would tax the feedstock content of imported products based upon that feedstock's U.S. tax rate. It is clear that such a measure is yet another barrier to foreign trade. The NAS is opposed to needless barriers to foreign trade.

FEDERAL CAUSE OF ACTION—CITIZENS' SUITS

The NAS opposes any measure which would detract from Superfund's primary objective, viz, the elimination of threats to public health and the environment that stem from mismanagement of hazardous waste.

Four Superfund bills currently under consideration would permit private citizens to seek to enjoin in a federal court government and/or private action (or lack of action) where a toxic hazard exists or is undergoing abatement. The NAS opposes the creation of yet another federal cause of action, this one under CERCLA.

S. 493 provides the narrowest scope of options available to private citizens. This bill would permit a person to bring a civil action for injunctive relief against the government, or any generator of hazardous substances that poses "an imminent and substantial endangerment to health or the environment." Such relief would also be available against the EPA where there is alleged a failure to perform non-discretionary duties.

The federal cause of action/citizen suit provision in both S. 51 and S. 596 is not so narrowly drawn. The major difference between the citizen suit provisions of S. 493 and S. 51/S. 596 is the remedy each would allow. S. 493 limits the remedy exclusively to injunctive relief. On the other hand, Section 138 of both S. 51 and S. 596 reads in part:

"Nothing in this Act shall restrict or expand any right which any person (or class of persons) may have under any Federal or State statute or common law to seek enforcement of any standard or requirement relating to hazardous substances *or to seek any other relief* . . ." (Emphasis added).

This appears to open the door to state tort actions being brought into federal district court based upon that court's pendent jurisdiction. The phrase ". . . or to seek any other relief . . ." is the key that opens the door. It terminates the limitation of remedies available to private citizens to injunctive relief.

For example, the party bringing suit against an alleged polluter might seek federal injunctive relief and also assert a claim for damages based upon state statutes or common law. As the matters arise from the same toxic incident, they would be within the court's pendent jurisdiction. Another possibility would be a private citizen with a state law tort claim intervening as of right in a pending federal court action against an alleged polluter. Thus, rather than encouraging ". . . private enforcement by allowing [only awards of attorney's fees and costs] to private plaintiffs where the court determines that the bringing of the action was in the public interest . . .", as contemplated in the Report Accompanying S. 51 [H. Rep. No. 99-11, 99th Cong., 1st Sess. 63 (1985)], the citizen's suit provision of S. 51/S. 596 would become the vehicle by which private citizens could seek the purportedly better relief offered in federal court for a state tort claim.

THE FEDERAL CAUSE OF ACTION—CITIZENS' SUITS UNDER H.R. 2022

The provisions for citizens' suits in H.R. 2022 are quite similar to those in S. 51/S. 596. However, H.R. 2022 would create expressly a number of potential defendants that could be the objects of federal suits brought under CERCLA. These include owners/operators of vessels or facilities where hazardous wastes were disposed; any person who contracts, agrees, or otherwise arranges for disposal, treatment or transport of hazardous substances, regardless of ownership, at the facility of another; or any person who accepts hazardous substances for transport to another facility or site. The liability of these potential defendants under H.R. 2022 would be strict, joint and several.

H.R. 2022 would allow a plaintiff in federal court under the CERCLA cause of action to recover for a wide range of medical expenses, losses of income and profits, economic loss, property damage, pain and suffering, and litigation costs. Aside from the fact that the volume of litigation attributable to a CERCLA cause of action would further swamp an already overburdened federal court system, and that the transactional costs associated with such a cause of action would be enormous, a number of pragmatic concerns also militate against this proposal.

None of the bills that propose a federal cause of action under CERCLA answer such important questions as from where the funds to satisfy enormous toxic tort judgements will come—or what the effect on worker's compensation systems will be—or where the evidence of the need for a federal cause of action under CERCLA exists. These measures do not suggest ways to discourage illegal dumping by toxic waste polluters. However, they would penalize unfairly one who contributes unintentionally to pollution, unknowingly pollutes, or otherwise has complied with the law in good faith.

THE STRICT, JOINT AND SEVERAL LIABILITY STANDARD

Enactment of a federal cause of action under CERCLA would lead to another important issue—that of the standard for determining liability following a judgment in or the settlement of a toxic waste suit in federal court. Strict joint and several liability implicit in some of the pending measures, and explicit in one (H.R. 2022), extends liability and total financial responsibility for a toxic hazard at a given site to any person or entity who may have generated or placed a substance into the site. The strict joint and several liability provision of H.R. 2022 would eliminate even the common law requirement of causation. A toxic tort defendant would be responsible for all of the damage done despite the fact that the plaintiff might not be able to single out that defendant's act as causing the injury. A defendant would be held responsible under H.R. 2022 even if his contribution to a site was not a hazardous substance.

MARPOL AND THE STRICT, JOINT AND SEVERAL LIABILITY STANDARD

NAS concerns about this unfair standard of liability stem from the MARPOL proceedings. The NAS believes that the federal government's goal of 100% Superfund cost recovery behind the strict joint and several liability standard could be given greater weight by the Environmental Protection Agency (EPA) deliberations over defining "generators" for purposes of the CERCLA—MARPOL link, than the fact that a ship's pumps introduce toxic wastes into the environment at the pier, and not the activities of the stevedore/marine terminal operator. The following illustrates NAS concern.

A vessel carrying some form of toxic or oily waste arrives at a marine terminal, and arranges for the discharge of the waste from its tanks to a tank truck owned by an independent waste management company. Upon completion of this operation, the vessel leaves. On its way to the waste disposal site, the tank truck jack-knifes, and pollutes the local drinking water reservoir. In this situation, the NAS foresees a desire to include a stevedore/marine terminal operator as a generator of hazardous wastes because of its inability to weigh anchor and steam away from the jurisdiction like a ship, and the likelihood that the assets of a highly-capitalized marine terminal are more valuable than a local trucking company or hazardous waste site owner. The imposition of strict joint and several liability truly would offend basic notions of fairness. In this instance, the stevedore/marine terminal operator has done nothing more than provide a berth for the vessel and a place to park the truck. The standard of liability would be based solely upon a potential defendant's ability to pay, and not upon overt acts causing the introduction of toxic wastes into the environment.

The impact upon the stevedore/marine terminal industry of being brought into the hazardous waste generation/handling cycle by further implementation of MARPOL would be disastrous. MARPOL, alone, would compel the stevedore/marine terminal operator to perform the nearly impossible feat in today's insurance market of finding toxic tort coverage for his own responsibilities. The strict, joint and several liability standard would force him to repeat this feat to protect himself from the acts of others. When the risks faced by an employer mount to such an extent that they become unmanageable, the NAS believes that incentive to comply with the law, or even stay in business, is destroyed.

In summary, the NAS is concerned that a number of current Superfund proposals, such as the demonstration project of victim's assistance and those described above, indicate a departure from the primary objective of cleaning up hazardous waste dumps, and ensuring a solid revenue base from which to continue this process. The NAS urges Congress not to allow Superfund to become an impediment to those whom it is meant to benefit by burdening it with provisions not consistent with the primary goal: hazardous waste prevention and cleanup.

JOINT STATEMENT OF THE AMERICAN PAPER INSTITUTE AND THE NATIONAL FOREST PRODUCTS ASSOCIATION

The American Paper Institute (API) and the National Forest Products Association (NFPA) have clear and specific interests in the reauthorization of the Superfund Act and various proposed bills which are now before the House Ways and Means Committee for the purpose of determining how to fund this legislation.

The over 170 member companies of API provide about 90 percent of all the pulp, paper and paperboard manufactured in the United States. In the course of their manufacturing processes, these companies use hazardous substances taxed under Superfund and generate volumes of solid wastes subject to various requirements of RCRA. While the paper industry's major waste streams are non-hazardous, many mills generate minor amounts of hazardous wastes. Similarly, the 2,500 forest products companies represented by NFPA produce a large portion of the nation's solid wood products such as lumber and plywood. Timber products processing in that industry also generates substantial quantities of waste materials—of which some lesser amounts are hazardous.

API/NFPA believe that it is in the nation's interest that the Superfund Act be effectively implemented and adequately financed. We have carefully studied the various legislative proposals for a funding mechanism which have been offered by members of the Congress in recent months. We have also examined the Administration's proposal as described by Mikel M. Rollyson during his May 9, 1985 testimony before the Committee. Although we support the reauthorization of the Superfund Act, API/NFPA have strong concerns about certain of these proposed approaches to funding Superfund. These concerns are detailed below.

THE SCOPE OF THE BILL

The level of funding of the Superfund reauthorization depends largely on the scope of the legislation. During the first five years of Superfund, the Environmental

Protection Agency was widely criticized for failing to clean up—or even begin action on—enough of the National Priority List (NPL) sites. It is apparent that in the public's mind the key purpose of the Superfund is to clean up these abandoned hazardous waste sites around the country which may be contaminating groundwater and posing a potential threat to the health of those who live nearby. It is API/NFPA's position that in Superfund's second five years all efforts should be focused on this important job. EPA officials have testified that they can only efficiently utilize approximately $1.1 billion a year in the process of cleaning up NPL sites, and the Administration bill proposes a five year funding level of approximately $ 5.3 billion. API/NFPA concur with this and support limiting Superfund response to the cleanup of abandoned hazardous waste sites and restricting liability to cleanup costs, excluding natural resource damage. We believe that $5–6 billion over the next five years should be adequate to accomplish this.

FEEDSTOCK TAX

As part of the package of funding mechanisms for the new Superfund, API/NFPA support maintaining the present level of excise taxes on crude oil, imported petroleum products and the existing list of feedstock chemicals. Various estimates indicate that this feedstock tax, at current tax rates, would provide about $280 million annually.

WASTE TAX

There are several proposals before the Committee which include as part of the Superfund funding package a tax on hazardous wastes—variously called a waste management tax, waste-end tax or waste generation tax. Based on the experiences of several state governments, API/NFPA have historically had reservations about the efficacy of this taxing approach. If, however, some form of waste tax may be included in the final funding package considered by the Congress, it should contain the following:

Tax Disposal Not Treatment.—In the 1984 Amendments to the Resource Conservation and Recovery Act, the Congress enacted a strong presumption against the land disposal of hazardous wastes and implied that consideration should be given to alternatives such as treatment. API/NFPA, therefore, strongly oppose proposals, such as the Administration's, which would tax the treatment of hazardous wastes. We particularly take issue with the proposal to tax treated wastewaters. Although the paper industry wastewaters are not hazardous under current EPA regulation, we are mindful that the 1984 RCRA Amendments require EPA to broaden the universe of hazardous wastes—possibly including paper industry wastewaters in the RCRA regulatory scheme. Accordingly, we have strong concerns about this taxing approach.

The paper industry generates over 7.2 billion tons of wastewaters each year. Consequently, even at the Administration's proposed $.25 per ton tax rate, the tax on the paper industry would be $1.8 billion per year. Taxing the paper industry's wastewaters could by itself fund a $9 billion Superfund over five years!

Exclude Wastes From CERCLA and RCRA Cleanup Actions.— While most proposals for a waste management or waste-end tax would exempt from taxation at least some wastes from a CERCLA cleanup action, only the Administration's latest proposal would similarly exclude wastes from a RCRA corrective action.

API/NFPA strongly urge that hazardous substances disposed of in the course of carrying out any cleanup action at a RCRA facility should be exempted from a waste management or waste-end tax.

Taxation of waste related to RCRA actions places an unfair burden on companies which are acting in a responsible manner to clean up wastes which were deposited on their plant sites in accordance with then existing regulations. Many of the companies which would be affected by such a tax have facilities that have been in existence for many years, some even for decades. In cases where large amounts of waste or contaminated soil are involved in the RCRA-imposed cleanup action, the tax would be huge. Thus, a "one-shot" waste-end tax would impose a heavy financial burden, especially on many small, environmentally responsible businesses.

When added to the extensive costs of a corrective action under RCRA, a large tax burden could force marginally profitable operators out of business. The cleanup of a bankrupted facility is very likely to become a public liability, i.e., a Superfund action.

Moreover, the imposition of a waste-end tax on material resulting from a RCRA cleanup or closure would not achieve one of the principal goals of the tax: discouragement of new hazardous waste generation. There simply is no rational linkage between this goal and the imposition of a tax on RCRA cleanup material. It is not new waste. Its generation cannot be avoided or minimized.

Furthermore, taxation of RCRA-generated waste is unfair, because it results in a sort of "double jeopardy" for responsible parties already paying to clean up RCRA sites. In addition to the substantial expense of RCRA waste removal, transportation, and disposal, waste-end tax measures would also require payment of tax on these same wastes upon ultimate disposal.

Accordingly, we urge that any waste-end tax provision considered by the Committee specifically exclude from the tax such wastes which result from RCRA cleanup activities.

Option To Tax On A Dry Weight Basis.—API/NFPA support the alternative tax computation provision proposed in S. 14, introduced by Senators Moynihan and Bentsen. This provision would allow an operator of a hazardous waste disposal facility who can establish the amount of water in the hazardous waste being taxed, to elect to pay a higher tax per ton on the amount of waste reduced by the weight of the water. This dry weight alternative calculation would properly place a tax on the hazardous constituents and not on the weight of water.

Tax Wastes Which Are Presently Hazardous.—API/NFPA also strongly support the provision found in the Administration's proposal which would only tax those wastes which are identified or listed as "hazardous" under Section 3001 of the Solid Waste Disposal Act as of the date of enactment of this Reauthorization of the Superfund Act. Wastes which are declared to be hazardous by EPA at some future time would not be subject to the tax absent further Congressional action.

GENERAL REVENUE FINANCING

API/NFPA support maintaining the present level of contributions from general revenues of 12.5 percent for funding the Superfund. We feel this is consistent with current budget proposals which call for a funding freeze in many programs. Inasmuch as Superfund cleanup provides a general societal benefit, we believe that general revenue financing is warranted.

OTHER FUNDING MECHANISMS

The Senate Environment and Public Works Committee, in reporting out S. 51, has recommended a funding level of $ 7.5 billion over five years. Representative Florio has testified that he considers $10.1 billion the minimum amount for five years. We recognize that a funding package composed of the present feedstock fee, contributions from general revenues at the 12.5 percent level, along with a waste management tax similar to that proposed by Representative Moore would not generate even $ 7.5 billion over five years. A variety of funding mechanisms have been proposed to achieve a higher funding level. API/NFPA believe that in addressing these proposals the Committee should search for that approach which fairly spreads the burden most widely throughout the taxed community. API/NFPA would be pleased to work with members of the Committee and their staff in developing such an approach.

The American Paper Institute and the National Forest Products Association appreciate this opportunity to offer our views on this legislation to members of the Committee and we urge your consideration of the points we have raised.

National Petroleum Refiners Association,
Washington, DC, May 23, 1985.

Hon. Dan Rostenkowski,
House of Representatives,
Washington, DC.

Dear Mr. Rostenkowski: The attached statement of the National Petroleum Refiners Association has been submitted for inclusion in the record of proceedings conducted by the Committee on Ways and Means on the reauthorization of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the Hazardous Substance Response Revenue Act of 1980 (Superfund), on April 25, 1985.

The NPRA represents nearly every petroleum refiner and petrochemical manufacturer in the United States. Both segments of our industry are anxious to be a part of the solution to the waste site problem. Our primary concern in this proceeding, however, is to ensure that our members are not further taxed to the extent that they are unable to compete in the domestic and international markets. We support a funding scheme along the following lines: $300 million a year from petroleum and feedstock taxes; $300 million a year from waste disposal and $400 million a year from general appropriations, cost recovery, and interest.

If additional funds are needed from industry sources, we would recommend Congress' enacting a more broadly based tax such as an excise tax on manufacturing.

We appreciate the opportunity to comment on this important issue.

Very truly yours,

URVAN R. STERNFELS, *President.*

Attachment.

STATEMENT OF NATIONAL PETROLEUM REFINERS ASSOCIATION

The National Petroleum Refiners Association appreciates the opportunity of commenting on the important subject of Superfund reauthorization. NPRA is a national trade association representing nearly every petroleum refiner and petrochemical manufacturer in the United States.

Both segments of the industry we represent have experienced serious economic set backs in the past four years and continue to be threatened by increasing costs, tax burdens and growing international competition in the U.S. as well as the world marketplace. As an example, in the past four years the number of operating refineries has been reduced from 315 to less than 200 with a consequent reduction in capacity from 18 million barrels/day to 14 million barrels/day. Similarly, the U.S. petrochemical manufacturers, who have long been important contributors to the nation's trade balance, are experiencing great difficulty in competing profitably in the international petrochemical market. Their positive contribution to the national balance of trade has fallen from $10.3 billion in 1980 to $7 billion in 1983.

Despite the difficulties being encountered by our member companies, they believe strongly that the clean up of hazardous waste sites is a major national problem requiring the best efforts of industry and government. We support the reauthorization of Superfund; however, taxes on petroleum and petrochemical feedstocks should not be increased over existing levels.

IMPACT OF ENVIRONMENTAL REGULATIONS

Additional RCRA and Superfund taxes and other hazardous substance regulations which are now being considered will significantly increase the environmental costs of U.S. refiners and petrochemical manufacturers. In the past decade, the refining industry has spent over $31 billion for environmental facilities to meet mandated product specifications and to control plant emissions. A study by Batelle Columbus Laboratories, for example, indicated U.S. refiners incur mandated environmental costs of as much as $1.50 per barrel over foreign export refineries. A report prepared by the Congressional Research Service concludes that the long-term effect of large Superfund tax increases of the magnitude of HR. 5640 would mean "that the drop in profits (or incurrence of losses) would reduce (or eliminate) the rate of return to capital, and resources would leave the U.S. primary petrochemical industry."

A recent study (Environmental Regulation and Economic Efficiency, Congressional Budget Office, March 1985) concluded that the output and productivity losses attributable to environmental regulation in the United States have been larger than those experienced in Canada, Japan, or the Federal Republic of Germany. The study did not compare the United States with those countries where new refining and petrochemical production capacity is now under construction.

INCREASED VULNERABILITY TO FOREIGN PRODUCTS

This country has long been dependent on crude oil imports for a sizeable portion of its energy needs. Relatively minor distortions of crude oil supply in the recent past have disproportionately disrupted our economy. A rapid shift of dependence to the importation of petroleum products, particularly light products such as motor gasoline, is underway and promises to render this nation more vulnerable to the threat of energy disruptions of far greater proportions. If the erosion of the domestic refining and petrochemical industry is allowed to continue unimpeded, our vital energy and petrochemical needs will no longer be met within our borders, or by our friendly neighbors. Additional tax burdens will only serve to accelerate the demise of our domestic industry.

According to a recent report by the International Trade Commission, many of the conventional energy-rich nations are increasing their refining and petrochemical capacity. As of January 1, 1985, says ITC, the OPEC nations had the capacity to refine 4.8 million barrels per day; and OPEC has plans to increase its refining capacity.

This additional refining capacity can be expected to adversely affect the health of the U.S. refining and petrochemical industry.

THE APPROPRIATE SCOPE OF SUPERFUND

With respect to the reauthorization of Superfund itself, it is important to remember that in 1980 the Comprehensive Environmental Response, Compensation and Liability Act was passed for the specific purpose of cleaning up the nation's abandoned hazardous waste sites. This clearly defined objective must be maintained in the reauthorized Superfund, and the scope of this program should not be expanded. There are, of course, related, but separate, issues to be dealt with—such as oil spill liability, regulation of underground storage tanks, compensation for persons who allege injuries from hazardous waste exposure, and provision for a federal cause of action. These, however, need to be dealt with independently, and on their own merits. The focus of CERCLA shouldn't be diluted and its objectives should not be confused with other significant, but separate, issues.

THE APPROPRIATE SOURCES OF FUNDING

It should go without saying that the burdens of funding a national cleanup program should be distributed fairly. This is what Congress had in mind when it imposed the tax on feedstocks, contemplating that refiners and petrochemical manufacturers would pass the tax along, so that all who benefit from the ultimate products would share in the cost. But, because of world-wide competitive pressures, refiners and petrochemical manufacturers have not—despite the expectation of the legislation—been able to pass on all the Superfund tax; as a result, the tax fails to reach the manufacturers of derivatives, the major disposers of hazardous waste. As it has turned out, relying solely on feedstock taxes on petroleum refiners and petrochemical manufacturers unfairly places the greatest burdens on industry sectors which, due to competitive pressures, can least afford to bear them. We believe, therefore, that it would be both unfair and unreasonable to increase the petroleum and feedstock taxes already being paid by refiners and petrochemical manufacturers.

If it is deemed necessary to raise additional revenues, a tax on the disposal and long-term storage of hazardous waste (such as S. 14, the Moynihan-Bentsen bill) would more fairly involve those most closely associated with the disposal sites requiring cleanup.

It would certainly help, moreover, if greater emphasis were placed on rational negotiations for recovery of cleanup funds from potentially responsible parties which can be identified as having contributed to a particular waste site.

Whatever other funding mechanisms are adopted, a substantial portion should come from general revenues, inasmuch as abandoned hazardous waste sites are a national problem which affects society generally. Surely the level of concern with these waste sites justifies the use of general revenues as society's share in remedying the waste site problem.

THE APPROPRIATE SIZE OF THE FUND

NPRA supports a funding scheme along the following lines: from petroleum and feedstock taxes, $300 million a year; from waste disposal (as in Moynihan/Bentsen), $300 million a year; from general appropriations, cost recovery and interest, $400 million, for a total Superfund of $5 billion over five years, as has been proposed by EPA. These measures support an efficient and manageable program.

If additional industry source funds are needed beyond the $600 million a year from petroleum and feedstock taxes and a waste disposal tax, we would recommend Congress' enacting a more broadly based tax including, for example, an excise tax on manufacturing.

FEDERAL PREEMPTION

There are several other areas that need to be addressed in a reauthorized Superfund bill: the federal Superfund law should preempt state or local environmental cleanup laws and taxes. The need for federal preemption has been demonstrated where the burdens of hazardous waste cleanup have been exacerbated by state and local laws and ordinances which overlap, and sometimes conflict with federal laws.

PEER REVIEW

We would also suggest that a peer review process, using experts from industry and the scientific community, be established to ensure the most economically feasible, yet environmentally suitable, cleanup solution is adopted. This is necessary because effective action at hazardous waste sites is often hindered when it is not clear that the best cleanup approach is being pursued. Companies attempting cleanup may be faced with conflicting demands from state and local officials, environmental activists, and the EPA itself as to how the job should be done. In regard to this activity, Clean Sites, Inc., a non-profit organization founded by environmental and business leaders, should be used as one of the resources in the cleanup process.

LIABILITY

Federal and state statutes provide that removal, storage, or transportation of wastes from a cleanup site must be conducted in accordance with a plan required by and approved by an appropriate governmental body (or bodies). Contrary to present law, when a company participates in conducting a cleanup action in accordance with such a plan, the participating party should be relieved of further liability by the appropriate government entities.

CONCLUSION

In summary, we emphasize that cleanup of hazardous waste sites is a national problem requiring the best efforts of all of us, and our industry is anxious to be a part of the solution. We do believe the burdens of funding a national cleanup program should be distributed fairly. Equity and current economic conditions our industry now faces do not justify increasing the petroleum and feedstock taxes. Whatever funding scheme is eventually developed must take into consideration the adverse impact any new environmental taxes would have on our domestic refining and petrochemical industry.

National Wildlife Federation,
Washington, DC, May 8, 1985.

Hon. Dan Rostenkowski,
Chairman, Committee on Ways and Means, U.S. House of Representatives, Longworth House Office Building, Washington, DC.

Dear Mr. Chairman: In lieu of appearing in person (which is not possible for me) at the Committee's May 9th hearing on "Various Proposals Regarding Superfund Tax Provisions," I wish to convey, for inclusion in the printed hearing record and for the information of Committee members, the views and recommendations of the National Wildlife Federation on these proposals on behalf of our 4.5 million members and supporters nationwide.

The attached statement addresses each of the four issues of principal concern to the Committee:

1. What level of cleanup can be undertaken efficiently? We think EPA can manage a minimum of 200 new Superfund sites each year and that this capability can and should be expanded over time—as supervisory responsibilities are increasingly delegated to EPA's ten regional offices, to cooperating states, and to contractors; as EPA is able to train and assimilate new staff; and as more and more site assessments and clean-up plans are completed, paving the way for construction work.
2. How large should the Fund be over the next five years? In accord with the approval last year by this Committee and the full House of legislation to reauthorize Superfund at the $10.1 billion level, we favor a Fund of at least $10 billion. At an average clean-up cost of $10 million per site for remedial clean-ups it would cost $10 billion to clean up 1,000 National Priorities List (NPL) sites over a 5-year period. Such a clean-up pace would be consistent with cleaning up within the next decade all projected—by EPA, at least—NPL sites. This calculation assumes that as many as several thousand short-term emergency response actions will also need to be paid for, along with enforcement and other program costs, but that these costs will be offset in whole or in part by state cost-sharing, the proceeds of cost-recovery actions, and by private sector and state-funded clean-ups.
3. What are appropriate sources for these additional revenues? A $10 billion program cannot, we believe, realistically be funded, as is the present $1.6 billion program, through a system relying solely on petrochemical feedstock taxes and general revenues. We favor increasing the available revenues through a combination of "waste-end" taxes and a broader-based surcharge on industrial receipts or profits.
4. What are appropriate permissible uses of the Fund? In addition to covering clean-up of inactive or abandoned hazardous waste sites, we believe access to the

Fund should be preserved at minimum for certain clean-up and restoration actions involving high-risk contamination of natural resources in the human food chain and pesticide contamination of highest-priority groundwater resources.

We commend you, Mr. Chairman, and your Committee, for your continuing efforts to bring about the expeditious reauthorization of a Superfund law which effectively safeguards the health and welfare of our citizens, now and in the future, and of the environment we all share.

Sincerely,

JAY D. HAIR, *Executive Vice President.*

Attachment.

STATEMENT OF THE NATIONAL WILDLIFE FEDERATION

Mr. Chairman and members of the committee, I submit this statement in my capacity as Executive Vice President of the National Wildlife Federation and on behalf of our 4.5 million members and supporters nationwide.

The Federation, our membership, and our 52 State and territorial affiliate organizations strongly support the expeditious reauthorization of a strengthened Superfund law which includes an extended and greatly enlarged trust fund. We also firmly oppose the proposed total preclusion of fund use to restore and rehabilitate natural resources damaged by hazardous substances.

SUMMARY OF COMMENTS AND RECOMMENDATIONS

1. Issue: What level of cleanup can be undertaken efficiently?

Comments: a. We have seen no demonstration that any shortfall in trained personnel at EPA cannot be corrected by expanding or improving EPA's hiring, training, and/or contracting efforts.

b. A CRS study found that, in general, there are ample scientific and engineering personnel to carry out an expanded Superfund program, and that there will not be a shortage of firms to undertake design and construction of Superfund remedial actions.

c. The lack of defined cleanup standards has been a major obstacle to accomplishing more site cleanups, as well as being a major constraint on the ability to delegate more responsibility to the states. This problem is about to be solved (either congressionally or administratively), making possible a rapid increase in site cleanup efforts.

d. EPA has been inconsistent in its estimates of how much money it could use and how many cleanups it could carry out efficiently, with estimates ranging from $1 billion and 150 sites per year to (implicitly) $2 billion and 200 new sites per year. Excessive reliance should, therefore, not be placed on these estimates.

e. It is up to Congress, not EPA or OMB, to determine the proper scope and pace of the Superfund cleanup program.

2. Issue: How large should the Fund be over the next five years?

Comments: a. This Committee appropriately approved a $10.1 billion reauthorization level last year.

b. At an average cleanup cost of $10 million per site for remedial cleanups, it would cost $10 billion to clean up 1,000 NPL sites over a 5-year period (this assumes that as many as several thousand short-term emergency response actions will also need to be paid for, along with enforcement and other program costs, but that these costs will be offset in whole or in part by State cost-sharing, the proceeds of cost-recovery actions, and by private sector and state-funded cleanups). Such a pace would be consistent with cleaning up all EPA-projected NPL sites within the next decade—about as long as the American public will have patience to wait. (To the extent the much larger cleanup estimates of GAO and OTA are correct, completion of the cleanup program will take much longer without the infusion of a lot more money).

Recommendation: Superfund should be reauthorized for the next five years at a level of at least $10 billion. (Of the pending bills, the Sikorski bill—H.R. 2022—comes closest to this funding objective).

3. Issue: What are appropriate sources for these additional revenues?

Comments: a. Although there is some room for expanding both the funding base and the rate of tax, it would be difficult (without creating major market dislocations) to generate $5.3 to $11.7 billion in Superfund revenues (the range covered by pending legislative proposals) through a feedstocks tax alone.

b. Of the pending bills that address each of the various potential funding mechanisms, feedstock proposals would yield from $294 million (H.R. 1775) to $1.82 billion (H.R. 2022) per year; waste-end proposals would yield from $120 million (revenue amendment to S. 51) to $600 million (H.R. 2022) per year; corporate earnings or receipts taxes would yield from $200 million (revenue amendment to S. 51) to $612 million (S. 955) per year; a tax on imported chemical derivates would yield $18 million per year (H.R. 1775); and general revenues would contribute from $44 million (S. 596) to $280 million (H.R. 2022) per year.

c. The current taxing scheme yields about $800 million per year; an additional $1.2 billion a year would be needed to produce a $10 billion Fund over five years. Without expanding the current feedstock tax or increasing the general revenue contribution to the program, this sum could be readily generated through a combination of waste-end and corporate earnings or receipts taxes, depending on how broad-based one wished to make the tax.

d. All of the corporate taxing proposals (revenue amendment to S. 51, S. 596, and S. 955) can generate hundreds of millions of dollars a year through exceedingly small assessments—representing a fraction of one percent of receipts or profits.

Recommendations: a. A major proportion of the funding mix should consist of feedstock and waste-end tax mechanisms, since the polluter should pay, and the petrochemical industry, and waste generators generally, bear a major share of responsibility for our national legacy of uncontrolled hazardous waste sites.

b. But, since industry broadly, and society as a whole, have also benefited from the production of the manufactured goods whose byproducts account for much of the current Superfund problem, it is appropriate to include a broad-based (but low-level) corporate industrial tax as one component of a multipart Superfund financing scheme.

4. Issue: What are appropriate permissible uses of the Fund?

Comments: a. Too narrow a view of the scope of the Fund may be self-defeating. Not only may it overlook major health and environmental risks, but it may impede the cleanup of even clearly fundable high-risk sites (e.g., where fundable and non-fundable contributions to a contamination problem cannot be readily differentiated).

b. The Administration's position (e.g., in H.R. 1342) on scope of the program is extremely narrow; the bill approved by the Senate Environment Committee (S. 51) is not much more expansive.

c. Liability on the part of responsible parties and access to the Fund are two distinct questions. The mere fact that applicators of registered pesticides and federally permitted wastewater dischargers acted lawfully and under government sanction, while a good reason for insulating them from legal liability for resultant cleanup costs, is not a valid reason to preclude use of Fund money to pay for needed response actions. Indeed, a principal role and purpose of the Fund is to provide a source of funding for needed response actions where funding was not available from private parties.

Recommendations: a. Access to the Fund to respond to pesticide contamination of groundwater should be retained, at minimum, to address "Class I" groundwaters (highly vulnerable and either irreplaceable or ecologically vital) and in states where a comprehensive state program was in place to protect groundwater from recurring contaimination by this and other means.

b. Preserve access to the Fund to address health-threatening natural resource damages, while precluding low-priority natural resource damage-related expenditures. There are at least two ways to accomplish this: (i) limit Fund use for natural resource damage restoration and rehabilitation to sites which EPA considered significant enough to add to the NPL—provided that NPL listing criteria were expanded to encompass exposure to humans via "natural resources in the human food chain"; and (ii) limit payment of damage restoration claims to state natural resource trustees to cases where the trustee state contributes a cost-share on the same basis and to the same degree required for remedial response actions under other provisions of Superfund.

c. Leaking inactive and abandoned underground hazardous substance and petroleum storage tanks should be brought within the scope of the Superfund program (including access to Fund moneys).

d. Fund money should be made available to the Health and Human Services Department (or to EPA) to cover the costs of health-effects studies at Superfund sites where the Administrator has a reasonable basis to believe that hazardous substance releases from the site may be endangering the health of people in the vicinity.

LEVEL OF CLEANUP WHICH CAN BE PURSUED EFFICIENTLY

EPA Administrator Lee Thomas has asserted, consistent with the position espoused in the Administration's $5.3 billion reauthorization proposal, that the Environmental Protection Agency can effectively manage and efficiently use only about

$1 billion a year on Superfund clean-ups. We are aware of no formal detailed documentation of the bases for this EPA contention. On March 28th Mr. Thomas told the Water Resources Subcommittee of the House Public Works and Transportation Committee that not enough trained personnel are available to conduct and manage the technical work involved in cleaning up a large number of sites at once. (Mr. Thomas cited a March 5 GAO memorandum to Representative Edward P. Boland, Chairman of the House Appropriations Subcommittee on HUD and Independent Agencies, which he said supported EPA's position. The GAO survey of three EPA regions found that, about half of the hazardous waste site coordinators and site project managers "were ranked below journeyman level for the managerial positions involved"—presumably, due to a shortage of qualified persons.)

We have seen no demonstration, however, that any shortfall in trained personnel at EPA is inherently not susceptible to correction by expanding or improving EPA's hiring, training, and/or contracting efforts. Indeed, a Congressional Research Service report, released on April 2nd by Commerce Subcommittee Chairman James J. Florio, concluded that "with few exceptions, available [laboratory] facilities and [technical] personnel could support a substantial expansion of the superfund program over the next five years." The CRS study found that, with few exceptions, there appear to be ample scientific and engineering personnel to carry out an expanded program, and that there is general agreement that there will not be a shortage of firms to undertake design and construction of Superfund remedial actions.

At the same time, a March 29th GAO report recommended that EPA be required to delegate more responsibility and funds to states for cleaning up abandoned hazardous waste sites. The report isolated the lack of defined cleanup standards as a major obstacle to delegating cleanup responsibilities while assuring a uniform level of public health protection. It would appear that, if legislation to reauthorize Superfund resolves the "how clean is clean question" and specifies what the cleanup standard will be, it will become a lot easier for EPA both to directly supervise more cleanups and to delegate more responsibility to the states.

Not only are the premises of EPA's $1 billion cap (to the extent they can be discerned) debatable, but EPA's bottom-line itself seems to change in different forums. For example, while Administrator Thomas is emphatic in public testimony that EPA could not effectively use more than $1 billion a year, the trade press has widely reported that Mr. Thomas has privately indicated to Members of Congress that, if EPA were provided with $1.5 billion a year (i.e., $7.5 billion over 5 years), the Agency would put that sum to good use. More recently, Bill Hedeman (Director of EPA's Office of Emergency and Remedial Response) told a D.C. Bar Association luncheon meeting (Environment Reporter, Current Developments, pp. 2137–38, April 5, 1985) that EPA can manage about 200 new sites each year. At an average remedial clean-up cost of $10 million for NPL sites, this translates into a $10 billion program over 5 years. (Although EPA optimistically—and unrealistically—projects that 40 to 60% of Superfund clean-up costs will be borne by sources other than the Fund, these inputs to the program are almost certainly offset by the additional costs of a larger number of short-term emergency "removal" actions at non-NPL sites and by enforcement and other program costs). By contrast, Lee Thomas has frequently stated that managing 150 new sites a year represents the limit of the Agency's capacity to address new sites.

In short, it is difficult to view EPA's protestations—however earnest—that it can manage no more than $1 billion per year (or 150 new sites) under a reauthorized Superfund as any more than guess-work and conjecture. If EPA's management structure, staffing levels, delegation and contracting programs, and technical training efforts fall short of what is needed to mount an aggressive Superfund cleanup program, they should be changed to meet the need. It is up to Congress, not EPA or OMB, to determine the proper scope and pace of the Superfund cleanup program.

APPROPRIATE LEVEL OF FUNDING OVER THE NEXT FIVE YEARS

The National Wildlife Federation is convinced that no cleanup program which drags out for additional decades will be regarded as credible or acceptable by the American public. We believe Superfund should be reauthorized for the next five years at a level of no less than $10 billion. Depending on the extent of non-Fund-financed cleanups and of emergency removal actions at non-NPL sites, a $2 billion a year program should ensure that the bulk of the 1800 to 2200 ultimately anticipated NPL sites (according to EPA) can be cleaned up within the next decade. (The task will obviously take a lot longer—although half as long with a $10 billion program than with one funded at the $5 billion level—if the General Accounting Office and the Office of Technology Assessment are correct in their much larger assessments of the size of the universe of NPL sites deserving of priority cleanup.)

Last year, this Committee and the full House of Representatives approved legislation which would reauthorize Superfund for five years at the $10.1 billion level. We supported this level of funding and would do so again.

Among the Superfund reauthorization bills currently pending in the House, H.R. 2022, sponsored by Representative Gerry Sikorski—providing a funding level of $11.7 billion—comes closest to affording the requisite number of cleanup dollars. We can and do support the funding level proposed in this bill.

APPROPRIATE SOURCES OF FUNDING

Although there is probably some room available for expanding both the funding base (e.g., by adding 18 new taxable organic and inorganic chemicals, as in S. 51) and the rate of tax (e.g., by providing an annual adjustment for inflation and by stepping up the per-ton or per-barrel rate of tax, as in S. 955—the Mitchell-Chafee bill) of the present feedstocks taxing mechanism to generate more money, it seems pretty clear that it would be difficult (without creating major market dislocations) to generate $5.3 to $11.7 billion in Superfund revenues (the range covered by extant legislative proposals) through a feedstocks tax alone. Indeed, no legislative proposal that we know of proposes reliance on a feedstocks tax alone—although H.R. 2022 proposes to raise 88% of an enlarged Fund by this means:

H.R. 1342 (Broyhill for Administration), S. 494 and S. 972 (Stafford for Administration)—waste-end, feedstock.

H.R. 1775 (Moore)—feedstock, waste-end, general revenues, imported chemical derivatives.

H.R. 2018 (Schneider-Wyden), S. 886 (Proxmire)—waste-end.

H.R. 2022 (Sikorski)—feedstock, general revenues, waste-end.

H.R. 2208 (Hall), S. 14 (Moynihan-Bentsen)—waste-end.

Revenue amendment to S. 51 (Stafford)—feedstock, general revenues, corporate net receipts, waste-end.

S. 596 (Bradley)—feedstock, corporate net receipts, waste-end, general revenues.

S. 955 (Mitchell-Chafee)—corporate earnings and profits, feedstock, waste-end, general revenues.

S. 957 (Bentsen-Wallop)—sale, lease, and import of manufactured goods and raw materials.

(Funding sources in each case are listed in descending order of revenues raised).

For the bills that address each of these funding mechanisms, feedstock proposals would yield from $294 million (H.R. 1775) to $1.82 billion (H.R. 2022) per year; waste-end proposals would yield from $120 million (Revenue amendment to S. 51) to $600 million (H.R. 2022) per year; corporate earnings or receipts taxes would yield from $200 million (Revenue amendment to S. 51) to $612 million (S. 955) per year; and general revenues would contribute from $44 million to $280 million (H.R. 2022).

The current taxing scheme (feedstocks plus general revenues) yields about $320 million a year. An additional $1.68 billion a year would be needed to produce a $10 billion Fund over five years.

Without expanding the current feedstock tax or increasing the general revenue contribution to the program, this sum could be readily generated through a combination of waste-end and corporate earnings or receipts taxes (e.g., $800 million waste-end plus $880 million corporate) depending on how broad-based one wished to make the tax. (If one wanted to eliminate the general revenue contribution—in deference to the deficit problem—this could easily be done through a slight expansion of the base or rate of the existing feedstock tax).

The various proposals involving broad-based corporate taxes or surcharges are the following:

1. Senator Stafford's proposed revenue amendment to S. 51 (131 Congressional Record S. 526, January 22, 1985) would raise $200 million per year through a tax on a corporation's net receipts in excess of $75 million, at a rate of 0.014 percent.
2. The Bradley bill (S. 596) would raise $400 million annually through a tax on the net receipts of any corporation with gross receipts in excess of $50 million, at a rate of 0.083 percent.
3. The Mitchell-Chafee bill (S. 955) would raise $612 million per year through a 0.3 percent tax on corporate earnings and profits in excess of $5 million. It would exclude "S corporations," regulated investment companies (RICs), and real estate investment trusts (REITs).

It should be noted that all of these corporate taxing schemes are able to generate hundreds of millions of dollars a year through exceedingly small assessments—representing a fraction of one percent of receipts or profits. (In contrast, the present feedstocks tax on chemicals amounts to as much as 2% of the wholesale price).

While the National Wildlife Federation is concerned primarily with ensuring that Superfund funding mechanisms suffice to generate the required revenues (i.e., at least $10 billion a year) in a stable, reliable, and administratively workable fashion, we agree with the proposition that the tax burden should be fair and equitable and not fall disproportionately on any one societal sector. We favor inclusion of feedstock and waste-end taxing mechanisms in the mix, because we believe the polluter should pay, and the petrochemical industry and waste generators clearly bear a major share of responsibility for our national legacy of uncontrolled hazardous waste sites. By the same token, society as a whole (and industry broadly), benefited from the production of the manufactured goods whose byproducts account for much of the current Superfund problem. It is appropriate, therefore, to include a broad-based (but low-level) corporate industrial tax as one component of a multi-part Superfund financing scheme.

Although a general revenues component could be justified on similar grounds, Federal budget and deficit realities may limit the viability of relying too heavily on a general taxpayer contribution. Few of the pending proposals would tap general revenues for more than a very small proportion of the overall funding target. Consequently, if the Committee deemed it necessary to delete a general revenue component, the foregone revenues could be raised fairly readily by small increases in the other funding sources.

APPROPRIATE USES OF THE FUND

One of the most important Superfund issues this Committee must address is: what are the appropriate uses of the Trust Fund, and what Fund uses should be prohibited? This is a critical issue because its resolution will determine how large an overall Fund is needed . . . and, also, whether certain hazardous substance problems are ever dealt with.

On the one hand, trying to be all-encompassing will diffuse Fund resources and unduly divert clean-up attention away from the sites and problems which present the greatest and most immediate threats to public health and the environment. On the other hand, too narrow an approach may be self-defeating. Not only may it overlook major health and environmental risks, but it could greatly complicate and impede the cleanup of even clearly fundable high-risk abandoned hazardous waste sites (e.g., where nearby non-fundable sources may have contributed to the observed contamination, but assessing the precise extent of each source's contribution is difficult or impossible).

The Administration (see, e.g., H.R. 1342) has taken an extreme, narrow view. It would rigidly restrict Superfund response authority to releases from uncontrolled hazardous waste sites. And it would eliminate or greatly limit a number of presently permitted Fund uses. Specifically, the Administration-backed bill would eliminate use of the Fund to restore or rehabilitate damaged natural resources (such outlays are currently restricted, in most cases, to a maximum of 15% of the Fund balance). And, it would prohibit Superfund response to each of the following categories of hazardous substance releases (unless the President determines that a major public health or environmental emergency exists and that no one else has the capability to respond in a timely manner):

from the lawful application of pesticides registered under FIFRA;

affecting public or private domestic water supply wells when contamination is not caused by a release from a hazardous substance treatment, storage, or disposal facility;

covered by and in compliance with a permit issued under other environmental laws;

from naturally occurring substances in their unaltered form;

from mining activities covered by the Surface Mining Control and Reclamation Act of 1977; and

affecting residential, business, or community structures when contamination is not caused by a release from a hazardous substance treatment, storage, or disposal facility.

The bill approved by the Senate Environment Committee (S. 51) is almost as restrictive. It would preclude Superfund response (without a Presidential determination) to releases of:

naturally occurring substances in unaltered form, or altered solely through naturally occurring processes or phenomena, from a location where they are naturally found;

from products which are part of the structure of, and result in exposure within, a facility; and

into public or private drinking water supplies due to deterioration of the system through ordinary use.

It would also prohibit use of Fund money to pay claims for natural resource damages (i.e., advance funds to State and Federal trustee agencies to pay for restoration and rehabilitation efforts) in any fiscal year for which the President determines that all of the Fund is needed for responses to threats to public health.

The Senate Committee bill would, however, preserve access to the Fund for Superfund responses to releases resulting from the application of registered pesticides and from mining activities (whether or not covered by SMCRA), as well as to certain releases affecting water supply wells or affecting residential, business, or community structures.

The National Wildlife Federation believes that access to the Fund should be retained (or provided, to the extent not currently available) for high-risk hazardous substance releases, for at least the following list of sources and effects—in addition to Fund use for response to releases from inactive hazardous waste sites:

Restoration and rehabilitation of hazardous substance contamination (regardless of origin) of natural resources in the human food chain, in cases posing high risk to human health.

Clean-up of high-priority (i.e., "Class I") groundwater resources contaminated by pesticides (whether or not properly registered and lawfully applied)—at least in states which operate comprehensive groundwater quality management programs (and have effective means to preclude recurrence of pesticide contamination problems).

Clean-up of high-risk hazardous substance build-ups resulting in whole or in part from releases covered by a permit issued under other federal environmental laws.

Clean-up of leaking abandoned underground storage tanks.

Conduct of studies of health effects associated with releases from high-risk Superfund sites.

With respect to two of these categories—i.e., federally-permitted releases and pesticide contamination of groundwater—the fact that the original environmental release was not illegal (and, indeed was carried out pursuant to a Federal permit or registration) should (as under present law) suffice to insulate the releasor or applicator from legal liability for clean-up costs. It should not, however, preclude access to the Fund to pay for needed response actions—any more than a responsible party's insolvency should preclude recourse to the Fund. The Fund was established precisely to provide a source of funding for necessary response actions where funding was not available from private parties. Whether the "unavailability" of private resources is a function of the private party's insolvency, or the result of a judgment by Congress that it would be inappropriate and inequitable to hold private parties responsible in cases where their actions had been expressly sanctioned by the government, the outcome should be the same: Fund money should be available to pay needed clean-up costs.

In the case of pesticide contamination of groundwater, the Committee may wish to consider one or two possible restrictions on the scope of permitted Fund use, to ensure a proper balance among competing Fund uses:

First, one could restrict use of the Fund to respond to groundwater contamination resulting from lawful pesticide application practices, to "Class I" aquifers—defined in EPA's "Groundwater Strategy" as groundwaters "that are highly vulnerable to contamination because of the hydrological characteristics of the areas under which they occur and that are also characterized by either of the following two factors: (a) irreplaceable, in that no reasonable alternative source of drinking water is available to substantial populations; or (b) ecologically vital, in that the aquifer provides the base flow for a particularly sensitive ecological system that, if polluted, would destroy a unique habitat."

Second, since it would make little sense to spend large amounts of Fund money to clean up a problem caused by ongoing pesticide application activities—without something being done to prevent a recurrence of the same problem—one might restrict the availability of Fund money for such cleanups to cases where a state program was in place to protect groundwater from contamination by this and other means.

Such a restriction (Fund availability only in states which operate comprehensive groundwater quality management programs) might serve the further useful purpose of providing an incentive to states to develop their own comprehensive groundwater protection programs.

From the standpoint of our members and affiliates, a key use of the Fund which ought to be preserved at least in part is to pay for the restoration and rehabilitation of damaged natural resources (where responsible parties cannot be made to bear these costs). Critics of the authority tend to (erroneously) portray it as a means of providing a windfall (at Fund expense) to State (and Federal) natural resource trustee agencies, to the extent claims must be entertained that exceed actual clean-up and emergency stabilization costs. (In fact, moneys received from the Fund can only be used to restore, rehabilitate or replace hazardous-substance-damaged natural resources). They also see this authority as diverting scarce Fund resources away from CERCLA's principal purpose, which is to protect public health from leaking hazardous waste sites. (In fact, at least for certain natural resources—i.e., those in the human food chain—hazardous substance damage or contamination may pose a very serious threat to human health, which may not be satisfactorily dealt with under any other Superfund response authority). Finally, critics are concerned that, given the broad definition of "natural resources," the absence to date of natural resource damage assessment regulations, and the uncertain number and magnitude of natural resource damage problems giving rise to restoration and rehabilitation needs, the Fund could be exposed to enormous potential liabilities for which no estimates have been made. (In fact, under present law, no more than 15 percent of the Fund balance can be used for most natural resource damage restoration purposes).

We think there are persuasive reasons to retain, at least in part, the authority to use Fund money to restore and rehabilitate damaged natural resources (and to pay trustee claims directed at the same objective). First, to the extent trustee agencies take their trust responsibilities seriously, they will use their own resources to preserve the "corpus" of the trust. Where natural resources are damaged as a result of third-party hazardous substance releases (and where the third parties responsible cannot be made to bear the costs of restoration), it would be unjust to place the full restoration burden on the trustee agencies (and on state and federal taxpayers who provide their operating budgets).

The Fund, derived from an assessment on the users and producers (and their customers) of chemicals and their derivatives, is a more equitable place to impose this burden.

But, second, and even more fundamentally; to the extent that Fund moneys are withheld and a trustee agency does not step in with its own resources to fill the breach, the public at large will have been done a real disservice—and one with major adverse health implications. Damaged natural resources (such as polluted lakes, streams and coastal areas) play a vital early-warning, canary-in-the-coal-mine role to alert us to potential hazards. The negative human health impacts are easiest to discern where hazardous substances enter the foodchain, in fish or shellfish for example. Access to the Fund to permit the cleanup and rehabilitation of contaminated river beds and other natural resources (especially in cases where there is a high risk of significant food chain exposure and contamination) is critical to the long-term protection of public health and the environment.

I believe it is appropriate and important to recognize the legitimate aspects of each of these positions. Critics of the natural resource damage program don't want to see Fund moneys diverted from high- to low-priority uses. Proponents (while sharing the desire to see the Fund used efficiently) recognize the dependence of human beings on properly functioning, undegraded natural systems, and that serious damage to one component of an ecosystem seldom leaves people unscathed. They are understandably reluctant to see such damage go unrectified under the comprehensive response program that Superfund represents.

Fortunately, a middle-ground exists which goes far to meet the fundamental interests of both camps: amend the Act to preclude low-priority natural resource damage-related expenditures; but preserve access to the Fund to address health-threatening natural resource damages. We invite the Committee's consideration of the following two approaches (there are doubtless others) to accomplish this:

If CERCLA (§105 (8) (A)) were amended to require the Hazard Ranking System for adding sites to the National Priorities List (NPL) to encompass exposure to humans via "natural resources in the human food chain," then use of the Fund could be appropriately limited under §111 (b) to restoration and rehabilitation of damaged natural resources only for sites which EPA considered significant enough to add to the NPL.

This would preclude diversion of Fund resources for low-priority, high-cost natural resource damage restoration efforts. At the same time, however, it would preserve EPA's flexibility to deal with high-priority, health-threatening food chain contamination problems.

Alternatively, inappropriate resort to the Fund for natural resource damage restorations could be sharply curtailed, and be appropriately confined to the highest-priority sites, by requiring states (in their natural resource trustee capacities) to contribute to the costs of accomplishing such restorations on the same basis and to the same degree required (state cost-share) for remedial response actions (under §104 (c) (3), etc.).

This would eliminate any possible abuse of the ability to use the Fund for natural resource restorations as a means of evading state cost-sharing obligations which would apply to remedial response actions. It also would eliminate state requests for low-priority, high-cost restoration actions.

We have two concluding recommendations concerning appropriate uses of the Fund:

First, given the importance of leaking underground hazardous substance and petroleum storage tanks as contributors to groundwater contamination—a fact recognized by Congress last year for active storage tanks, when it amended the Resource Conservation and Recovery Act to require aggressive steps to stem this problem—it is no less appropriate and vital that inactive and abandoned storage tanks be brought within the scope of the Superfund response program.

Second, given the real fears of people who live in the vicinity of Superfund sites, it is eminently appropriate to make Fund money available to the Health and Human Services Department (or to EPA) to cover the costs of health-effects studies at Superfund sites where the Administrator has a reasonable basis to believe that hazardous substance releases from the site may be adversely affecting the health of people in the vicinity.

This concludes our prepared statement. We appreciate the opportunity to submit it for the record of the Committee's Superfund deliberations.

OLDOVER CORP.,
Ashland, VA, May 15, 1985.

Hon. DAN ROSTENKOWSKI,
Chairman, House of Representatives,
House Ways and Means Committee,
Rayburn Building, Washington, DC.

DEAR MR. ROSTENKOWSKI: I have submitted a written statement to the staff of your Committee concerning the Administration's bill (H.R. 1342) and other proposals being considered by your Committee to partially fund the Superfund program through the imposition of waste-end taxes. Last year I testified before your Committee recommending that waste-end taxes be structured to encourage treatment or uses of wastes that are economically attractive and environmentally responsible. The beneficial use of burning ignitable wastes as industrial fuel was exempted from the tax in the final version of the House bill (H.R. 5640). My written statement to your Committee this year is recommending the same exemption.

Exclusion of wastes burned for energy savings in industrial furnances would have a very minor impact on the revenue producing potential of a waste-end tax. Only 350 thousand tons of the estimated 260 million tons of generated wastes are suitable for use as fuel. Excluding or exempting these wastes from taxation would reduce the estimated $600 million revenues of the Administration's proposed waste-end tax by less than two tenths of one percent.

Congressman Hall has offered an ammendment (H.R. 2208) which would exclude the taxation of the beneficial use of ignitable wastes as fuel. Congresswoman Schneider has introduced a bill (H.R. 2018) which would tax waste treatment if it did not render the waste non-hazardous in a year. Both bills would effectively exclude taxing the beneficial use of burning ignitable waste as fuel. The Hall ammendment would have the advantage of eliminating bureaucratic paper work. The Schneider ammendment would have the advantage of monitoring the location and treatment of waste although this is presumably being done in the EPA manifest system. I hope you and your Committee will give these proposals or some similar recommendation consideration and approval in the tax provisions of the final Superfund bill.

I am enclosing a copy of my written statement, brief "position papers" with substantiating details of our recommendation and a brochure describing our beneficial use of ignitable wastes as fuel. If you or your staff have questions, please call me at (804) 798-7981.

Thank you for your consideration of our recommendation.

Very truly yours,

LOUIS R. LAWSON, Jr.

Enclosures.

STATEMENT OF THE SOLITE CORP.

Mr. Chairman, Solite Corporation manufactures lightweight aggregate, a product used by the construction industry in concrete and in lightweight masonry blocks. Lightweight aggregate is produced in rotary kilns through the application of intense heat to expand crushed clay, slate or shale. Lightweight aggregate weighs approximately two-thirds as much as crushed stone. It has many unique applications related to its lightweight and thermal/insulating characteristics. For example, most of the bridge decks around Washington including the recently refurbished Woodrow Wilson bridge contain lightweight aggregate which withstands the freezing and thawing cycles in the winter which would result in deterioration of the entire deck.

Solite uses large amounts of ignitable wastes consisting principally of industrial solvents as fuels in its manufacturing process in six locations in the east and midwest. Since 1972 Solite has safely burned over 100 million gallons of ignitable wastes amounting to a savings of conventional energy sources equivalent to over 75 million gallons of oil or over 400 thousand tons of coal.

The Environmental Protection Laboratory in Cincinnati has recently completed an $8 million study of 31 facilities burning hazardous wastes (incinerators, industrial boilers and industrial furnaces/rotary kilns). Two of these tests were conducted in Solite plants. The Agency has concluded that these facilities can burn hazardous waste as fuels without any threat to human health or the environment. The EPA endorses the use of ignitable wastes as fuel in processes such as ours, which achieve destruction and removal efficiencies of 99.99%.

We recommend that this useful savings of energy be excluded or exempt from the waste-end taxes being considered as a revenue source for the Superfund program. The EPA estimates 350 thousand tons of the total 264 million tons of generated hazardous wastes can be burned as fuel. The EPA has stated that there are not enough commercial incinerators to burn the 350 thousand tons of ignitable waste. Exclusion of this beneficial use of hazardous wastes would reduce the anticipated $600 million revenue from waste-end taxes by less than one tenth of one percent. The exclusion of energy saving processes from waste-end taxes would not only help promote and encourage the safe and efficient destruction of wastes for energy savings, but also help to ensure that cost-effective waste fuels would continue to be available to the highly competitive, energy intensive industrial furnace facilities such as those in the lightweight aggregate, cement, iron, steel, lime and phosphate industries.

Companies such as Solite can afford to continue to use wastes as fuels only as long as the cost of burning these wastes is less than the cost of conventional fuels such as oil and coal. The imposition of a waste-end tax on wastes burned as fuel savings would have a significantly adverse impact on the cost-effectiveness of burning hazardous wastes in place of fossil fuels. The fee would add to the cost of burning wastes and along with the other costs of burning these waste fuels in an environmentally protective manner, further narrow the gap between the cost of burning waste fuels and the cost of burning conventional fuels. The fee proposed by the Administration (H.R. 1342) would narrow this gap by a significant 10–20 percent.

The ultimate impact of a waste-end fee or tax on wastes used as fuels will be to discourage their use for energy recovery. This result would be extremely unfortunate, not only for the industries that rely on these waste fuels to hold down production costs, but also for the environment and natural resources of our Nation. Millions of gallons of burnable wastes that otherwise would have been safely destroyed would be disposed of either improperly or by methods less protective of the environment than high-temperature thermal destruction. Further, millions of gallons of oil or thousands of tons of coal would be burned needlessly.

Solite proposes an incentive-based waste management tax. Such a tax (1) would encourage the use of methods of waste management that are environmentally protective, (2) would encourage economically beneficial energy recovery activities, and (3) is fair in that it would recognize the absence of any connection between existing or future Superfund sites and facilities such as those operated as industrial furnaces.

One of the principal objectives of a waste-end or waste management tax, aside from the generation of revenue, should be to penalize, and thereby reduce, the disposal of hazardous waste into the environment. Consequently, any such tax should be carefully considered to insure that it will not penalize environmentally desirable methods of managing waste, such as the thermal destruction of wastes for energy savings.

In addition to being environmentally protective our process is economically beneficial because it involves using wastes as a fuel, and not simply the destruction or treatment of wastes to get rid of them (incineration). From an economic standpoint the latter is simply another cost that must ultimately be borne by industry approximately $300-350 a ton. Burning wastes as fuel costs an average of $30-40 a ton providing an economical service to industry in addition to the benefits cited above.

A waste-end or waste management tax can easily be drafted to apply to hazardous wastes that are disposed into the environment, without including wastes that are thermally destroyed in an environmentally protective manner for energy recovery. The simplest way of accomplishing this objective is by providing that the tax applies to the receipt by a hazardous waste disposal facility of waste that is disposed of or held in long-term storage. "Disposal" should then be defined to exclude recycling and energy recovery, since they do not involve the release of hazardous waste into the environment.

Essentially, this is the approach taken in the Hall-Fields Superfund bill (H.R. 2208). Its definition of "disposal" is clearly intended to include only those waste management practices that may result in hazardous waste entering the environment, i.e., "the discharge, deposit, injection, dumping or placing of any hazardous waste into or on any land or water so that such hazardous waste may enter the environment." (emphasis added).

The relevant provisions of Representative Schneider's Superfund bill (H.R. 2018) are not identical to those in H.R. 2208, but the intent is apparently the same, that is, to impose the tax only upon hazardous wastes that are released, in hazardous form, into the environment.

We appreciate the opportunity of making our views known to your committee and respectfully request that you favorably consider our recommendations.

Questions and Answers About the Proposed Exclusion or Exemption of Incinerators, Industrial Boilers and Industrial Furnaces Burning Ignitable Wastes as Fuel From Waste-End Taxes

(Proposed by Louis R. Lawson, Jr. in a statement made in behalf of Solite Corporation)

PURPOSES/OBJECTIVES OF WASTE-END TAXES

To the extent funds come from industrial sources, a broad-based tax—other than an expanded feedstock tax—should be applied to disposers of hazardous waste. Several suggestions for such a tax have been proposed and other similar proposals may be offered; it is our hope that the Congress will give serious consideration to these.

Because of the relatively small volume and the lack of toxicity, there should be no tax on the use of ignitable wastes as fuel in industrial furnaces or boilers which have demonstrated that they can meet the 99.99% destruction and removal requirements of the RCRA regulations.

One of the waste-end tax provisions is to discourage land disposal. A tax on the use of wastes as fuels would only increase costs without furthering this goal.

Waste-end taxes should be designed to recognize the connection between the sources of abandoned hazardous waste disposal sites and the need to expend public funds to clean up these sites. There is no such connection for energy recovery facilities. On the contrary, it is apparent that without energy recovery facilities there would be far more abandoned hazardous waste sites than actually exist today.

EFFECT OF INDUSTRIAL FURNACE WASTE-END TAX EXEMPTION OR EXCLUSION ON PROPOSED SUPERFUND REVENUES

The EPA's proposed ammendments to CERCLA (the Superfund bill) would establish a Fund with revenue derived primarily from three sources:

Feedstock—$300 million per year.

Waste-management—$600 million per year.

Fines, recovered costs, etc.—$100 million per year.

The waste-management (waste-end) taxes would be applied at different rates depending on the type waste disposal/treatment. The taxes that would be applied to incinerators, industrial boilers and industrial furnaces would be $2.61 per wet-weight ton in FY 1986 increasing to $4.37 in FY 1990.

According to the EPA's estimates, approximately 264 million tons of hazardous wastes are generated each year in the United States. They also estimate that only 350 thousand tons of these wastes can be used as fuel in all of the combustion units including incinerators, industrial boilers and industrial furnaces. The EPA endorses the burning of ignitable wastes as fuels in each of these type units as environmentally and economically attractive treatment methods.

If incinerators, industrial boilers and industrial furnaces are excluded or exempt from the waste-end taxes, the loss in revenue to the proposed Superfund income will be less than one tenth of one percent of the total. We feel that this modest reduction is well worth while to encourage the continued beneficial used of ignitable wastes as fuel conserving the nation's conventional energy sources. The economic and environmental effects of using ignitable wastes as fuel are discussed in detail in other position papers.

ENVIRONMENTAL IMPACT OF BURNING IGNITABLE WASTES AS FUEL

The Thermal Destruction Branch (TDB) of the Environmental Protection Agency Laboratory in Cincinnati, Ohio has recently completed a five year, $8 million study of 31 facilities burning ignitable wastes as fuel. These included 12 incinerators, 12 industrial boilers, 6 industrial furnaces and one blast furnace. Facilities included in the industrial furnace category were the cement, lime and lightweight aggregate industries. Approximately 40–50 different waste streams including more that 150 "principle organic hazardous components" (POHC's) or individual chemical components were investigated.

The tests demonstrated that the facilities listed above generally achieved the EPA requirements for 99.99 percent destruction and removal efficiencies in destroying the ignitable wastes. The TDB concluded that these type facilities can burn ignitable wastes as fuel and destroy the wastes with no threat of damage to human health and the environment. They also acknowledge that burning of ignitable wastes as fuels is less costly to industry than destruction of the materials in incinerators.

The EPA is endorsing the burning of ignitable wastes as fuel as part of the solution to the environmentally safe destruction of hazardous wastes. They report that the existing off-site incinerators have the capacity of burning only about 10 percent of the available ignitable wastes. They recommend that the existing facilities in the above categories be used to dispose of the remaining ignitable wastes without the construction of new and costly incinerators. They estimate that about 350 thousand tons of ignitable wastes are being used each year as fuels. This is less than one tenth of one percent of the 264 million tons of hazardous waste being generated each year.

We have recent correspondence from the Director of the Office of Solid Waste of the EPA, John H. Skinner, restating the "EPA's policy of waste management (and) strongly encouraging recycling and reuse of materials in preference to land disposal" (Copy of Skinner letter dated March 7, 1985 attached). Also attached are copies of several newsletter summaries of a report prepared by the EPA on the incineration/burning of hazardous wastes and a recent statement by Skinner recommending "combustion as still the best option" for solid waste management.

IMPACT OF PROPOSED WASTE-END TAXES ON USE OF HAZARDOUS WASTE AS FUEL

Highly competitive, energy intensive manufacturing industries are the only companies using hazardous waste as fuel to reduce production costs. The nearest economical alternative to the use of waste as fuel is coal. Any waste-end tax which would raise the net cost of the waste to these industries would narrow the gap between the use of waste compared to coal.

The use of wastes as fuel is operationally more difficult than the handling of coal. In addition, the costs of obtaining permits from the EPA to store and use wastes as fuel have steadily increased making their use less attractive. If the industries using wastes as fuel are forced to return to their traditional fuel, coal, because of waste-end taxes the industries generating these wastes will have to have their materials taken to commercial incinerators at more than ten times the cost of having them destroyed by the fuel users. In the long run, the public will pay for this change in increased prices.

The amendments originally proposed by the Administration of $2.61 per ton would have narrowed the margin between the use of waste as fuel and the use of coal by nearly one third. The Administration has unveiled an alternate plan which would impose a $35/ton tax for most land-based methods of treatment, storage and disposal. Such a tax would force industrial furnaces to abandon the use of wastes as fuel.

On the positive side, the Bentsen-Moynihan amendment being considered would exempt the burning of wastes as fuel from any tax. A modification of this view is the Proxmire amendment which would tax the receipt of wastes to be used as fuel with a rebate on proof that the hazardous wastes had been converted to inert, nonhazardous materials within a year. Either of these proposals would encourage the use of waste as fuel.

ECONOMICS OF THE USE OF IGNITABLE HAZARDOUS WASTE AS PROCESS FUEL IN INDUSTRIAL FURNACES

Industry can afford to use hazardous wastes as fuels only as long as the costs are less than those of conventional energy sources. The imposition of a waste-end tax on hazardous wastes burned for energy conservation would have a significantly adverse impact on the cost-effectiveness of burning these materials in place of fossil fuels. The fee proposed in the Administration's Superfund bills (S. 494 and H.R. 1342) would close the cost benefit between the use of these wastes as fuels and the use of conventional fuels by 10–20 percent. The Administration proposed waste-end tax would have a relatively small impact on commercial incinerators charging substantially higher disposal fees as pointed out below.

The ultimate impact of a waste-end fee on hazardous wastes used as fuels would be to discourage their use for energy conservation. The result would be extremely unfortunate, not only for the industries that rely on these less expensive waste fuels to hold down production costs, but also for the environment and natural resources of our Nation. Millions of gallons of burnable hazardous wastes that otherwise would have been safely treated will likely be disposed of either improperly or by methods less protective of the environment than high-temperature thermal treatment. Further, millions of gallons of imported oil would be burned needlessly.

A waste-end tax on hazardous wastes would force many energy conservation facilities to abandon the use of hazardous wastes as fuel, leaving waste generators with expensive commercial incinerators as their only disposal option. Estimates of current commercial incineration fees range between $250 and $350 per ton. Energy conservation facilities using the same wastes as fuel are charging generators approximately $35–50 per ton for thermal treatment achieving the same environmental destruction efficiencies as the incinerators.

The reason for the wide differences between the fees is simply that commercial incinerators must charge generators high disposal fees to make profits on their very expensive installations while the energy conserving units are using the materials as cost saving fuels in their processes. We are confident that the increased costs of these other options will result in some generators disposing of their wastes using less expensive, environmentally harmful alternatives including the encouragement of "midnight dumping" and other improper disposal activities.

OFF-SITE VS. ON-SITE BURNING OF HAZARDOUS WASTES AS FUEL

Two of the purposes of the Administration proposed waste-end taxes to support the Superfund program are to encourage (1) the highest degree of waste reduction possible by the generator and (2) the burning of hazardous wastes on-site. Everyone agrees that these are worthy objectives. On the other hand, penalizing/taxing off-site burning of hazardous waste as fuel simply because it has been moved from one place to another has a built in/unfair bias which should be recognized and addressed in considering waste-end taxes.

The EPA estimates that a relatively small fraction of the total tonnage of wastes generated can be burned as fuel. They estimate only 350 thousand tons of the 260 million tons generated annually can be/is being burned off-site as fuel. Neither the EPA nor anyone else has data on the amount of hazardous waste being burned as fuel by industry on their own premises/on site. Being the largest off-site user/burner of ignitable wastes in the nation, we are probably in a better position than the EPA or anyone else to estimate the amount of hazardous waste being burned on-site because every gallon burned on-site is lost to us.

We know that most, if not all, large generators of organic chemicals (the largest source of ignitable wastes) have the capability of burning materials in on-site incinerators or boilers; mostly the latter. This is particularly true of large manufacturers or users of organic solvents; the largest source of ignitable wastes available to industrial furnaces and boilers for burning as fuel. The bias or unfairness of the waste-end taxes on ignitable wastes burned off-site is that the tax is imposed on the receivers of the waste. So long as the waste is burned on-site it is not taxed. Under the Administrations proposed amendments the simple act of transporting ignitable materials to a secondary site for burning as a fuel requires that they be classified as hazardous waste and subjects to a waste-end tax. We think this is unfair and should be exempt or excluded from waste-end taxes.

Economics and good hazardous waste management practice have led many large manufacturers or users of organic solvents to have their spent or dirty materials recycled by distillation to recover the clean solvents for reuse. After distillation, liquid waste residues containing dissolved organic resins, varnishes and other ignitable/burnable materials are left behind in the distillation units. Some of these are burned on-site by the solvent recyclers but the majority must be shipped to off-site burners because of the large quantities involved. These "still bottoms", as they are called, are the largest single source of ignitable wastes available for burning as fuel. Were these materials burned on-site by the recyclers they would not be classified as hazardous wastes. Transporting these materials to secondary sites for treatment/burning requires that they be re-classified as hazardous wastes.

One of the elements the Administration emphasizes in supporting the creation of a waste-end tax in the proposed amendments to CERCLA is to "focus on the type of industries and practices that have caused the problems that are addressed by the Superfund". Solite and other companies using ignitable wastes as fuel are part of the solution to the problem of proper hazardous waste treatment not the creation of the problem. Solite, for example, has burned over 100 million gallons of ignitable wastes since 1972 amounting to energy savings of over 75 million gallons of oil or 400 thousand tons of coal. We estimate that the total of the other facilities burning ignitable wastes as fuel is about the same amount.

The EPA continues to point out that incineration/burning wastes is the most environmentally desirable alternative in converting hazardous wastes is to inert, harmless materials. At the same time, the EPA points out that there are not enough on or off-site incinerators in operation to burn all of the ignitable hazardous wastes created each year. The largest of the less than a dozen off-site incinerators burned only 30 thousand tons of wastes last year.

The average cost of off-site land based incineration of hazardous wastes is $300–500 per ton. The proposed charges for at-sea incineration are estimated to be in the range of $750–1,250 per ton. Solite and other companies using ignitable wastes as fuel not only provide additional incineration/burning capacity but they also provide this service to industry at approximately ten percent of the cost of commercial incineration.

Industrial furnaces charge between $25 and 50 a ton for burning ignitable wastes as fuel. The reason for the large difference in incineration/fuel burning charges is that the commercial incinerators are burning the ignitable wastes along with toxic hazardous wastes and must charge for the service. The burners of waste for fuel have the economic advantage/benefit of recovering/using the energy available from the wastes in their manufacturing processes and as a result can charge less for the service. This inexpensive, environmentally effective service to industry should be rewarded not penalized with a waste-end tax.

PRESENT AND PROPOSED RECYLCLING/TREATMENT ACTIVITIES TO BE REGULATED BY RCRA

Most hazardous waste recycling/treatment activities have been exempt from regulation under the Resource Conservation and Recovery Act. This exemption was due in part to a Congressional desire to encourage recycling/treatment and reuse of waste materials. In reviewing these regulations, EPA has concluded that protection of human health and the environment takes precedent over the encouragement of recycling/treatment activities.

One of the activities subject to EPA's jurisdiction is the burning waste or waste fuels for energy recovery. An important part of the regulation deals with different classes of combustion units that are used to burn hazardous wastes. The agency already regulates the emissions from hazardous waste incinerators and intends to regulate the emission from non-industrial and industrial boilers and industrial furnaces.

The actual burning of hazardous wastes in boilers and industrial furnaces for energy is presently exempt from regulation and will be covered by future rulemaking. (This is not to be confused with the storage of wastes prior to burning which is regulated.) EPA plans to use a phased approach for issuing regulations governing actual burning activities.

The first set of regulations will ban burning of hazardous wastes and contaminated used oil in non-industrial boilers. Proposed regulations governing these activities were published in the January 11, 1985 Federal Register, pages 1684–1724.

The second set of regulations will include permit standards for burning waste in industrial boilers and some industrial furnaces. These standards will provide the same level of protection as currently mandated for incinerators.

Finally, general narrative standards are being considered for the remaining industrial furnaces burning hazardous wastes for energy recovery. These narrative standards will allow these units/to be permitted immediately rather than being delayed until specific standards are developed.

The definition of an industrial furnace published in the January 4, 1985 Federal Register, pages 614-668 includes a list of devices that fall under this classification. Unless a device is specifically named on the list, it is not an industrial furnace, and will either be a boiler or an incinerator. The regulatory definition in part is as follows:

(1) Cement kilns.
(2) Lime kilns.
(3) Aggregate kilns.
(4) Phosphate kilns.
(5) Coke ovens.
(6) Blast furnaces.
(7) Smelting, melting and refining furnaces (including pyrometallurgical devices such as cupolas, reverberator furnaces, sintering machines and foundry furnaces).
(8) Titanium dioxide chloride process oxidation reactors.
(9) Methane reforming furnaces.
(10) Pulping recovery furnaces.
(11) Combustion devices used in the recovery of sulfur values from spent sulfuric acid.

HAZARDOUS WASTE DISPOSAL VS. HAZARDOUS WASTE TREATMENT

Hazardous waste disposal is defined in the EPA regulations (CFR 40 Section 257.2) as "the discharge, deposit, dumping, spilling, leaking, or placing of any solid waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters."

Hazardous waste treatment is defined in the EPA regulations (CFR 40 Section 260.10) as "any method, technique, or process, including neutralization, designed to change the physical, chemical or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store, or dispose of, or amenable for recovery, amenable for storage, or reduced in volume."

Thermal treatment is defined in the EPA regulations as (CFR 40 Section 260.10) "the treatment of hazardous waste in a device which uses elevated temperatures as the primary means to change the chemical, physical, or biological character or composition of the hazardous waste. Examples of thermal treatment processes are incineration, molten salt, pyrolisis, calcination, wet air oxidation and microwave discharge. (See also "incinerator" and "open burning")."

Incinerator is defined in the EPA regulations as (CFR 40 Section 260.10) "an enclosed device using controlled flame combustion, the primary purpose of which is to thermally break down hazardous waste. Examples of incinerators are rotary kiln, fluidized bed and liquid injection incinerators."

Under the proposed Administration Superfund bills (S.494 and H.R. 1342) thermal treatment devices would be subject to waste-end taxes because they accept hazardous waste. We feel that one of the purposes and incentives of waste-end taxes should be to encourage hazardous waste reduction and treatment and discourage disposal. A waste-end tax on burning hazardous wastes as fuel would be counterproductive. (See Economics of the Use of Ignitable Hazardous Waste As Process Fuel in Industrial Furnaces.)

We feel that the failure to acknowledge the differences between hazardous waste treatment and disposal may have been an oversight on the part of the Administration staff in drafting the legislation. We feel there should be a separate tax structure recognizing the differences between the potential long term problems of hazardous waste disposal and the merits of hazardous waste treatment. We feel that this distinction is particularly significant if the treatment breaks down the hazardous waste into non-hazardous products and is even more important if the treatment recovers energy from the hazardous waste for useful purposes and saves the nations conventional energy sources.

We burn ignitable hazardous wastes in our rotary kiln, controlled thermal treatment process to produce a lightweight stone product used in the construction industry. The product has many applications related to its inert, lightweight and thermal properties. Other energy intensive, economically highly competitive industries use similar furnaces in the production of cement, steel, sulfuric acid, lime, paper and other commercial products.

INCINERATION VERSUS INDUSTRIAL FURNACE REGULATIONS AND PERMITS

When asked, "If you can destroy the ignitable hazardous wastes and meet the destruction and efficiency requirements of an incinerator, why not get an incinerator permit?"

Industrial furnace operators do not want to obtain permits as incinerators for a number of reasons: First, and most important is the fact that industrial furnaces are not in the incineration business. Industrial furnaces manufacture commercial products using ignitable wastes as fuel. Ignitable wastes that can be used as fuel amount to less than one tenth of one percent of the EPA estimated 264 million tons of hazardous wastes generated each year.

Secondly, repeated experience of industrial furnace operators has shown that the public usually understands and in most cases accepts the fact that hazardous wastes are being burned as substitute fuel in industrial furnaces. These same groups usually become very suspicious of the intent of the industrial furnace operators when the terms "incineration" or "incinerator permits" is used. We attribute this to the generally held public impression that incinerators are used to destroy undesireable materials. This is confirmed in media stories about incinerators burning pesticides, insecticides PCB's, etc.

Another factor in our reluctance to apply for incinerator permits are the rigid, technical construction and operating requirements in the incinerator permits. These include required, very sophisticated devices for removal of particulates and toxic liquids and gases from the emissions from burning toxic material in the incinerators. The industrial furnaces burning ignitable hazardous wastes as fuel do not accept nor can they use these types of materials and therefore do not require the sophisticated emission cleaning systems properly required in the incinerator construction and operating permits.

Another factor of considerable importance in industrial furnaces not wanting to apply for incinerator permits is the length of time, complexity and money required for filing and processing incinerator Part B permits. Only 18 incinerator permits have been issued by the EPA since 1978. More than 500 operators of combustion units originally filed notice of intent to apply for incineration permits. Less than 300 have filed for interim status; the great majority of these being on-site units operated by large chemical companies. About 150 Part B incinerator permits are under review. The EPA estimates that about 200 will be eventually issued. They also acknowledge that the permitting process can take as many as five years.

The final and most compelling reason industrial furnace operators do not want to file for incineration permits is the fact that operating standards and regulations will be issued by the fall of 1985 for industrial boilers and industrial furnaces. It is expected that these standards will require the destruction and efficiency requirements of incinerators but may be somewhat less rigid in construction and operating procedures.

SOLITE'S INTEREST IN THE WASTE-END TAX

Solite and its subsidiaries manufacture lightweight aggregate, a stone product used in the construction industry in concrete and in lightweight masonry blocks. Lightweight aggregate is produced in rotary kilns, a category of EPA classified industrial furnaces, through the application of intense heat to expand crushed clay, slate or shale. Lightweight aggregate weighs approximately half to two thirds as much as crushed stone. It has many unique and interesting uses related to its light weight and thermal properties.

Solite and its subsidiaries have safely burned over 100 million gallons of ignitable hazardous wastes as fuels since 1972. Burning 100 million gallons of ignitable wastes as fuel amounts to energy savings equal to 75 million gallons of oil or 400 thousand tons of coal contributing to the achievement of our national energy conservation goals. Solite currently burns 15-25 million gallons of ignitable hazardous waste each year making it one of the largest users of these materials as fuel in the United States. Solite trucks have transported the ignitable hazardous wastes more than 10 million miles without an environmental incident.

The beneficial effects of Solite and other industrial furnaces using ignitable hazardous wastes as fuel are discussed in detail in other position papers.

ENVIRONMENTAL PROTECTION AGENCY,
Washington, DC, March 7, 1985.

Mr. LEWIS R. LAWSON, Jr.,
Oldover Corporation, P.O. Box 228, Ashland, VA.

DEAR MR. LAWSON: We've read your letter of February 14, 1985, with interest and understand your concerns. We appreciate the efforts Oldover Corporation has made to burn hazardous waste as fuel in light aggregate kilns. EPA's policy of waste management has always strongly encouraged recycling and reuse of materials in preference to land disposal. To that end, burning of hazardous wastes for energy recovery was exempted from direct regulation.

Our forthcoming regulatory program concerning the burning of hazardous wastes for energy recovery as mandated by the 1984 amendments to the Resource Conservation and Recovery Act (RCRA) does not intend to prohibit the practice of burning waste in boilers and industrial furnaces. We are presently completing our review of available information on the practice, including consideration of the very same tests at your Florida and North Carolina facilities which you reference in your letter. Our review of those two test reports indicates that aggregate kilns burning hazardous waste can meet the same environmental health standards imposed upon incinerators fully permitted under present RCRA incinerator rules. So we do agree with you that burning of hazardous waste fuels in kilns can be done safely.

Your letter goes on to point out a number of problems you are having with individuals who are quoting conclusions in an early EPA study; Evaluation of the Feasibility of Incinerating Hazardous Waste in High-Temperature Industrial Processes, (EPA-600/2-84-049, 1984). The authors in this feasibility study conclude that lightweight aggregate kilns cannot achieve the same level of destruction of refractory hazardous wastes as can incineration.

The methodology used to make the predictions about the destructibility of various wastes has never been used by EPA as a basis for permit issuance or denial. Our permitting decisions are based upon actual emission testing of selected hazardous waste constituents in which the destruction of those constituents is measured as a destruction and removal efficiency (DRE). The report's conclusions were based on a 1981 theoretical study conducted in the absence of real test data and were best estimates only. The study was a feasibility study developed to help EPA set priorities for future testing of full scale facilities and was based upon a theoretical model constructed for industrial boilers. The work was completed in 1981 before any field testing results were available. Its publication date, however, was delayed until 1984. Since then, results of our boiler and furnace test program have not shown useful predictive validity of the model. In practice, boilers and furnaces are much less sensitive to individual physical chemical parameters than the theoretical model suggested.

Actual destruction efficiency data from testing is much more reliable for predictive and permitting purposes.

I trust the above explanation has addressed your concerns. Please call Mr. David Sussman of the Waste Treatment Branch (202) 382-7917 if we can help further.

Sincerely,

MICHAEL B. COOK,
(For John H. Skinner,
Director, Office of Solid Waste (WH-562)).

STATEMENT OF ERIC SWIDER, PRESIDENT, NEW ENGLAND COUNCIL, INC.

Mr. Chairman and members of the Ways and Means Committee, my name is Eric Swider. I am President of The New England Council, a regional business association that for 60 years has dedicated itself to working in concert with government to improve economic conditions in our six-state region.

The New England Council represents more than 1,300 firms engaged in the full spectrum of business activity. We count among our membership: financial institutions and insurance companies, utilities, basic manufacturing industries, high tech firms and educational institutions, to name a few.

The Council has long viewed the problems associated with hazardous waste management as a major environmental, health and economic threat to the region and to the nation. Accordingly, we support reauthorization of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, also known as Superfund, and are pleased to testify before this Committee.

The Council believes that abandoned hazardous waste sites pose a broad-based, societal problem to the nation, requiring in turn society's full and active engagement in efforts to remedy the problem. A recent Office of Technology Assessment report underscores the magnitude of the task facing the nation. It reports that there are as many as 10,000 sites that may ultimately end up on the National Priority List, with total cleanup costs for these sites running about $100 billion. This clearly would be too much of a burden for government to bear alone. Nor was it the intent of CERCLA for government to bear it alone.

The Council would urge this Committee to return to first principles as it deliberates on how to finance Superfund, and to consider ways to get potentially responsible private parties more actively involved in what is shaping up to be a massive cleanup effort.

Based in part on the New England experience, The Council has some recommendations to make to the Committee with respect to how private parties can be encouraged to join the government in cleanup action.

Unlike other regions, New England has never had a few large centralized petrochemical plants generating and disposing of large amounts of hazardous waste. Instead, the vast majority of Superfund sites in New England originated as waste repositories that were used by numerous companies over a period of a hundred years. Small quantities of waste have been generated and disposed of by a side cross section of manufacturing, service and high technology industries. For example, as many as 400 companies are involved in the cleanup of just one New England site identified by the EPA as a National Priority site. It is this large number of companies identified with each site in the region that further complicates the cost and liability assessment process. The reauthorization of Superfund will have a broad impact on New England business, i.e. financial institutions and insurance companies, as well as manufacturers.

Proper management of hazardous waste including the siting of hazardous waste facilities in New England has been identified by The Council as one of its top priorities. The Council is working to secure for the 13,000 firms in New England that collectively employ more than one million New Englanders and generate a minimum of 375,000 tons of hazardous waste annually, local cost-effective and environmentally sound hazardous waste management facilities.

On March 27, The New England Council's Board of Directors approved The Council's further involvement in the reauthorization of Superfund. Our efforts will be aimed at amending Superfund to achieve realistic policies that 1) make site cleanups more efficient and 2) insure proper treatment of hazardous wastes currently being generated, thereby preventing the creation of new Superfund sites in New England.

The Council has worked with Senator John H. Chafee (Rhode Island) to develop the requirement that is now part of the Senate's Superfund bill requiring states to establish hazardous waste management plans and contracts/compacts establishing capacity for the next 20 years of hazardous waste.

The Council advocates an increased level of cleanup and realistic incentives which would promote private party cleanup activities. One of the major impediments to increased cleanup, however, is the existing concept of joint and several liability, which makes any company that disposed of a substance at a treatment, storage, or disposal facility liable for all cleanup activities at that site, regardless of the quantity and propriety of disposal.

Since New England has many Superfund sites consisting of large numbers of potentially responsible companies, the methods by which liability is assessed is crucial to each responsible company. Enforcement action should reward responsible behavior and punish irresponsible actions or it will be doomed to failure.

Companies have clearly demonstrated a willingness to clean up sites for which they are deemed responsible. As of May, 1984, private companies had committed over $175 million for cleanup action at 24 sites on the EPA's National Priority List and had actually begun cleanup at an additional 15 sites not identified on the National Priority List. During the past year, the EPA has also been actively working to remove impediments hampering individual company efforts through its CERCLA Settlement Policy, which is aimed at achieving expeditious cleanup through negotiations with responsible parties rather than through lengthy litigation.

The Council advocates that the EPA's CERCLA Settlement Policy be modified and has identified action steps to increase the efficiency of environmental procedures for New England companies identified as parties responsible for the cleanup of a Superfund site. The Council is now working with Congressional staff to determine how current governmental procedures can be altered to reflect actual corporate responsbility for damages. We believe that it will result in an increased cleanup pace.

Because the problem of unpredictable liability impairs the ability of a company to obtain environmental impairment liability insurance, The Council proposes mandatory apportionment standards as an alternative criterion for apportioning liability. Mandatory apportionment standards would require the identification of certain factors that make risks insurable in order to enable and/or encourage private party involvment in cleanup activities. Some of these factors could include:

volume of waste;
toxicity and persistence of waste;
degree of care taken by the responsible party; and,
degree of cooperation with the EPA during past and present negotiations.

Mandatory apportionment standards should be enforceable by statute or regulation. This apportionment method and the ability to obtain environmental liability insurance would enable private parties to adequately assess the risks associated with assuming responsibility.

In addition, the following changes in current Superfund procedures would give potentially responsible companies some guarantees and protection in return for their assumption of cleanup costs:

1. Release from liability for cleanup work completed if the cleanup method agreed upon by all parties is utilized.

Liability release in return for assuming cleanup costs is a valuable incentive for private party cleanups. At present, however, the EPA does not automatically grant releases for actual cleanup completed following agreed upon cleanup procedures. The EPA believes that if remedial measures approved by them prove inadequate and future damage occurs, the Agency should continue to have legal recourse. In contrast, The Council supports a release from liability provided that the cleanup is accomplished using a method agreed upon by the EPA and the companies, and provided that the work meets previously identified objectively measurable standards for the cleanup. The Council advocates that payment for future damage should be made by Superfund. Because the Superfund law calls for the cleanup of hazardous waste sites in an expedient manner, such a mechanism to establish acceptable business risk for companies participating in cleanup activities is essential.

2. Contribution protection to prevent nonsettling parties from suing settling parties for reimbursement.

Once the EPA negotiates a partial settlement with a group of companies, it will often pursue action against non-settling responsible parties to pay for the rest of the cleanup cost. As a result, these non-settling parties may sue settling parties. Such protection would remove this significant impediment to the settlement process.

3. Offers for cleanup of less than 100 percent of a site should be considered under more liberal criteria than presently exists.

Public-private cleanup ventures are necessary if these health-threatening sites are to be cleaned up quickly and efficiently. If, for instance, private parties can negotiate to pay 80 percent of cleanup costs, The Council believes cleanup actions should go forward with EPA Superfund assistance to complete the entire cleanup. The EPA has expressed a willingness to be flexible by considering offers of payment for cleanup of less than 100 percent but only in a narrow set of circumstances under joint and several liability. In addition, the EPA's criteria for evaluating partial settlements applies to all cases. The Council instead supports public-private cleanup efforts whenever possible and wants decisions made on a case by case basis.

The EPA's CERCLA Settlement Policy is a good foundation for creating incentives for private party cleanups. While these guidelines need to be modified and liberalized, The Council believes this policy needs to be formalized through statute or regulation so that private parties can rely on EPA enforcement of these principles.

Thank you.

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